

MSEA

EEAA

UNDP/GEF

**Building Capacity for Egypt
to Respond to
UNFCCC Communications Obligations
(Phase II)**

**Final Report
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Annex 1

List of Acronyms

ARC	Agriculture Research Center
ARD	Afforestation, Reforestation and Deforestation
CAS	Cassette Acquisition System
CDM	Clean Development Mechanism (Kyoto Protocol)
CLAC	Central Laboratory for Agriculture Climate
COP	Conference of the Parties
DHI	Direct Human Induced
DRC	Desert Research Center
EEAA	Egyptian Environmental Affairs Agency
EIMP	Environmental Information and Monitoring Program
EMA	Egyptian Meteorological Authority
FCCC	Framework Convention on Climate Change
GADFR	General Authority for Development of Fish Resources
GAUP	General Authority for Urban Planning
GCRMN	Global Coral Reef Monitoring Network
GEF	Global Environment Facility
GHG	Green House Gas
GOPP	General Organization for Physical Planning
ICZM	Integrated Coastal Zone Management
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation (Kyoto Protocol)
LULUCF	Land Use, Land- Use Change and Forestry
MWRI	Ministry of Water Resources and Irrigation
NARSSS	National Authority for Remote Sensing and Space Science
NCS	Nation Conservation Sector
NCSA	National Capacity Self Assessment
NGOs	Non Governmental Organizations
OSPOS	Operated Suspended Wave Recorder
QUELRO	Qualified Emission Limitation and Reduction Obligation (Kyoto Protocol)
SBI	Subsidiary Body for Implementation
SBSTA	Subsidiary Body for Scientific and Technological Advice
SNAP	Support For National Action Plan
SWRI	Soil and Water Research Institution
TDA	Tourist Development Authority
TWG	Technical Working Group
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nation Development Program
USCSP	United States Country Studies Program
WWTP	Waste Water Treatment Plants

1- Introduction:

As the home of one of the oldest civilizations on the planet, Egypt's concern about global climate change and its consequences on sustainable development comes as no surprise. Scientific evidence and climatic records have sharpened the focus on the relationship between the concentrations of greenhouse gases (GHG) in the atmosphere and the rise in global temperatures.

Within the context of setting up a climate change national institutional structure, Egypt formed an inter-ministerial national climate change committee in October 1997. This committee represents a wide range of governmental and non-governmental stakeholders under the leadership of the Chief Executive Officer of the Egyptian Environmental Affairs Agency (EEAA). Recent policy setting efforts in Egypt demonstrated the country's national commitment to face this global threat. The development of Egypt's Climate Change Action Plan, National Communication on Climate Change, the National Energy Efficiency Strategy, and the National Strategy for Solid Waste Management are all parts of Egypt's roadmap to manage its climate change activities. Other positive steps are also considered for implementation through various donor agencies.

In 1995, the EEAA launched two major programs: 1) Support for National Action Plan (SNAP), sponsored by the United States Country Studies Program (USCSP), and 2) Building Capacity for Egypt to Respond to the United Nations Framework Convention on Climate Change UNFCCC, sponsored by the Global Environment Facility (GEF) and implemented by EEAA in cooperation with the United Nations Development Program (UNDP). These two programs facilitated many studies covering various topics such as (GHG) emissions inventory, GHG mitigation and adaptation technology assessment, climate change adaptation options, and abatement costs. Results and recommendations were disseminated through several conferences, seminars and workshops.

2- The project:

The project titled "Building Egypt's Capacity to Respond to (UNFCCC)" was divided into two phases: the first started in 1996 for a duration of around 42 months. During this period the following activities were accomplished:

- Preparing background studies.
- Training specialists of technical working groups and team members in the various governmental sectors.
- Publishing the climate change quarterly Arabic newsletter, which covers the national and international events related to the issue of climate change.
- Organizing several workshops to promote the issue of climate change.
- Preparing Egypt's initial national communication.

2.1-Project Objectives:

The objectives of the second phase, from November 2000 to December 2001, reflected Egypt's commitment to the climate change agreement. It concentrated on needs identification and capacity building to address some of the gaps and needs identified during the first phase. Some of the activities undertaken in the second phase are:

2-1-1 Technology Transfer:

As a result of the process undertaken for producing the initial national communication of Egypt's climate change, a critical mass of experts has been created and some institutions were established, or are in the process of formation, such as technical working groups, teams or units concerned with climate change. It is extremely important to build upon climate change institutions in order to assess technology needs and design, and evaluate and host projects. These projects involved the implementation of some of the results of the first national communication by filling in some of the identified gaps.

The main aim of this activity was, first, to continue the successful cooperation between the climate change focal point on one hand, and the current institutions, governmental and non-governmental organizations on the other. Second, to enlarge the circle of stakeholders to reach most of the interested groups. For the inter-seasonal period between the initial and second national communications, this cooperation took the form of mutual projects and ensured the involvement of the technical working groups associated with the national and international activities concerned with climate change issues.

A. Identification and Submission of Technology Needs:

The activities conducted under this category included:

- Assessment of the proposed technologies outlined in Egypt's initial national communication to mitigate climate change impacts on coastal zones, water resources and agriculture. The activities focused on one or two areas due to time and budget limitations. For coastal zones, the few technologies recommended for different locations in Egypt, such as breakwaters and beach nourishment were explored.
- The identification and assessment of the impact of the abatement measures of climate change on Egypt's coral reefs in the Red Sea coast, identified in the initial national communication as an area to be addressed in future work, was tackled. The study proposed a preliminary identification of the monitoring network hardware and software for the Egyptian coral reef in the Red Sea coast. The study of technology needs also dealt with the organization of a workshop for training the scientific community on the technology to detect and study the change caused by climate change to coral reefs.
- Analysis of the IPPCC special report on Land-Use, Land-Use Change and Forestry to the parties of the twelfth session of (SBSTA) held in Bonn, Germany in June 2000. (See details below).

B. Capacity Building to Assess Technology Needs:

In line with the studies mentioned above, several meetings and two workshops were organized with the technical working groups within different institutions. Junior level staff participated in the events which aimed at building the staff's capacity and enhancing their awareness. Participants discussed rules to acquire these technologies and proposed and designed projects for their development.

To build capacity to assess technology needs, Egypt's climate home page has been enhanced and linked to the EEAA home page. The website now provides information to the public, and climate professionals in Egypt and other parts of the region. It has proven to be an excellent tool to promote training, education, and public awareness in Egypt.

2.1.2-Capacity Building for Participation in Systematic Observation Networks:

This activity focused on the identification of the current Egyptian systematic observation network, including meteorological, atmospheric, oceanographic and terrestrial observation systems. This included identifying the current available hardware and software, capacity for modeling and prediction, and available databases. Identification of national needs within this context, It also included the organization of a workshop to present and discuss the findings of the identification process.

2.2-Organizational Structure:

To achieve the project objectives the following organizational structure was approved:

First: Project Coordinator:

Dr. Zeinab Farghely, EEAA, was chosen as project coordinator in the second phase.

Second: National Committee:

The inter-ministerial climate change committee took the lead in managing the 2nd phase of the project. The committee didn't only continue to play an important role in discussing the issue of climate change, but also developed to become the umbrella for all climate change related activities. The committee comprised representatives from all relevant ministries, in addition to new distinguished individuals with demonstrated expertise in climate change, for example the Chairman of the National Authority for Remote Sensing and Space Sciences (NARSSS).

Third: Technical working group (TWG)*:

In the second phase the TWG continued to play the same role it played in the first phase to develop policy options relevant to climate change. Like the National Committee, it enhanced its role through adding new members.

2.3-Duration of the Project:

The project began in 2000 and ended in 2001. The duration of the second phase was 12 months. During this period the following activities were undertaken:

- Distributing issues 9 to 12 of the Climate Change Newsletter.
- Updating the climate change home page, which is currently linked to the EEAA website.
- Posting the new version of the climate change newsletter on Egypt climate change website. The newsletter is regarded as an effective tool for increasing the awareness of the public and specialists.
- Organizing regular meetings with the technical working team to provide technical support and monitor the implementation of different activities.
- Completing the training workshop on the climate change effects on coral reefs, nature conservation and management on 21 May 2001, Sharm El Sheikh, South Sinai.
- Completing the workshop entitled "Systematic Observation Systems in Egypt on 6th August 2001.

* List of participants in Annex 1

- Finalizing the report on the greenhouse gases emissions resulting from energy and waste sector, for the upkeep and enhancement of the institutional capacity in the area of greenhouse gases inventories, as a basic component of the national communication.
- Organizing a workshop to present the findings of the IPCC report on the land use and land use change on 20th October 2001.

2.4- Project Outputs:

The outputs of the project outputs, over its two phases, included the following:

- Developing an institutional structure to address climate changes issues and comply with the UNFCCC.
- Broadening the terms of reference of the established technical working group to ensure full sectoral coverage.
- Preparing the country reports on the assessment of policy opportunities and priority areas for intervention, focusing specifically on the non-energy sectors.
- Filling specific gaps in a number of non-energy related activities in the established inventories of GHG sources and sinks in Egypt.
- Assessing past experience as well as ongoing and proposed climate change initiatives and impact studies in Egypt.
- Enhancing the technical capacity in climate change related issues.
- Developing a solid national mechanism capable of providing full support for climate related activities.

2.5-Participants:

Several organizations at the national level are extensively involved in climate change related activities as follows:

- Environment organizations such as EEAA.
- Energy related organizations, such as the Organization for Energy Planning, the Egyptian Electricity Authority, and the New and Renewable Energy Authority.
- Research centers, such as the Agriculture Research Center and the National Research Center.
- Non-governmental organizations.
- Egyptian universities, such as El Azhar University, which initiated a remarkable program on the marine biology of the Red Sea and Aqaba Gulf, Alexandria University with a solid program in Oceanography and marine biology, and the Faculty of Economics and Political Science, Cairo University that has been involved in climate change related activities at the national level.
- Governmental organizations and national laboratories such as the General Organization for Industrialization, Central Laboratory for Agricultural Climate, General Organization for Sanitary Drainage, Tebbin Institute for Metallurgical Studies, and the Soil Water and Environmental Institute.

These multi-layered climate change institutional arrangements played a major role in integrating climate change issues in the national agenda.

3- Activities:

3.1-Public Awareness:

3.1.1 Issues 9 to 12 of the Climate Change Newsletter

To increase the awareness of the the public and specialists, the newsletters were written in a simple and attractive style, giving advice on how to limit climate change phenomena through, for example, water and electricity consumption. Newsletters are also posted on the climate change website.

A- Main Subjects of Issue no. 9:

A-1 The American Egyptian Meeting on Cases of Climate Change:

Participants discussed cooperation between the American and Egyptian parties in the field of climate changes, especially the movement of clean technology.

A-2 Article on: The Second Phase of the Project Entitled "Building Egypt's Capacity to Respond to UNFCCC ":

This article compared the objectives, activities and goals of the first phase with the process of implementation in the second phase.

A-3 The UN Secretary for Climate Change Receives Egypt's Report on Climate Change:

The main subjects of the report included the following:

- The negative effects of climate change
- scenarios of climate change
- The challenge to human health
- Procedures of limiting radiation

A-4 Study on the Use of Hydrogen and the Genes of Petroleum in Means of transportation:

Within the framework of the international efforts to limit pollution, the UN program provided financial support to several projects to use petroleum genes in different means of transportation. One of these projects was implemented in Cairo under the supervision of EEAA. Its goal was to help introduce the technology of petroleum genes to the market.

A-5 Study on National Strategy to Implement Clean Development:

A study was prepared within the framework of the Kyoto protocol, with support from the international bank financed by the Swiss government. The main goal of this study is to prepare a complete set of projects, covering production, consumption, and energy transportation sectors.

B- Main Subjects of Issue no. 10:

-The Sixth Conference of the Parties (COP)

The conference was held in November 2000 and attended by 180 participants. Mrs. Nadia Makram Ebeid, former minister of state for environmental affairs, headed the Egyptian delegation. She had several meetings with: the conference chairman, the head of the Group of 77, the head of USA delegation, and environmental ministers of Morocco, Syria, and Tunisia. After 15 days of tough negotiations, the Dutch environmental minister and the conference chairman announced that the delegates of the 180 participating countries failed to reach consensus on how to implement what has been agreed upon in Kyoto in 1997. Participants were divided up into several working groups to discuss the following topics:

1st Group:

- Financial mechanisms
- Building capacities
- The movement of technology
- The negative effects

2nd Group:

- Kyoto protocol

3rd Group:

- Use of land and forests

4th Group:

- Compliance mechanisms

The participation of Egyptian youth for the first time in the conference of climate change was also highlighted.

C- Main Subjects of Issue no. 11:

The COP was resumed in Bonn from 16th to 27th July 2001. Working groups were divided into four sub-groups around four main issues:

- Technological movement and building
- Kyoto protocol
- Use of land and forests
- Compliance mechanisms

The sub-groups examined and evaluated the documents of the 6th COP. A ministerial session was later held to discuss the political document of Mr. Bronek, conference chairman. The Egyptian participants coordinated with the Group of 77, and China outlined the highlights of their agreement as follows:

- The need for immediate implementation of the climate change agreement.
- No new time schedule for implementing the Kyoto protocol
- The importance of full and comprehensive activation of the plan of Bins IRAs
- The important role played by the Group of 77 in the negotiations. Participants stressed the need to maintain this unity in order to influence the international public opinion and promote the interests of the developing countries.

At the end of the conference, the position of the developing countries was upheld, and an agreement was reached to adhere to the political document agreed upon during the ministerial session.

Issue no. 11 also featured some children's games like the "Ladder and Snake", that introduces to children the concepts of punishment and reward by relating them to energy and the environment, and encouraging them to present ideas for protecting the environment.

D- Main Subjects of Issue no. 12:

D.1.1- Achievements of the second phase of the project:

1-Studies and reports on technological needs for climate change:

- A study to evaluate national needs within the context of the phenomenon of climate change in the coastal zones.
- Study on the effects of climate change on coral reefs.
- Report on the climate monitoring system in Egypt.
- Study analyzing the report of "the international governmental agency for climate change for the use of land and forests".

2- Workshops:

- Workshop on the effect of climate change on coral reefs.
- Workshop to discuss the report of "the monitoring system of climate in Egypt".
- Workshop on LULUC.
- Workshop on evaluating the technological needs for limiting the effect of climate change.

3- Increasing climate change awareness through:

- A variety of TV and radio programs.
- The climate change home page.
- Presenting the achievements of the project in the 2001 environmental exhibition.

D.1.2 – The 7th conference of the Parties:

The conference was held in Marrakech from 29 October to 10 November 2001. Four thousand four hundred participants represented 172 countries, in addition to delegates of NGOs, observers and the press. The developing countries had a strong negotiating position and the conference concluded by reaching several agreements on the case of land and forest use, the Kyoto protocol, and on reports and information sharing in the international conference for continued development in 2002.

3.1.2- T.V and Radio Programs on Climate Change:

These programs included the following:

- Competitions and prizes in the "youth and sport" program
- Programs for increasing climate change awareness in the "cultural program"
- Programs in "Cairo broadcast" on:
 - Use of land and forests
 - Means of following up the climate change phenomenon
 - T.V programs on the satellite channels that analyze the phenomenon of climate change, its reasons and the role of citizens in facing it.

3.1.3- Children Educational Game (Ladder and Snake):

The aim of this game is to enhance children's awareness about energy, climate change,

and environmentally good and bad habits.

3.2-Studies:

In order to enhance Egypt's capacity to deal with the issue of climate change, the project initiated several studies to address the expected negative impact of climate change on scientific bases.

3.2.1- Study on the Status of Systematic Climate Observation in Egypt:

The aim of this study is to provide an overview of the current situation in Egypt regarding systematic climate observation. The objectives of this study were to identify:

- The national capacity in the following areas: meteorological and atmospheric observation, oceanographic observation, terrestrial observation, and Space-based Observing programs.
- The needs to improve the national systematic observation network.
- The needs to support climate modeling and prediction.
- Available databases.

The study included a survey of the national capacity of the following:

A. Meteorological and Atmospheric Observation:

A.1 Egyptian Institute for Meteorological and Atmospheric Observation

A.1.1 Egyptian Meteorological Authority (EMA)

The EMA measurement network consists of more than 112 stations, including surface stations, upper air stations, air pollution, global radiation and agro – meteorological stations. Of these stations, 26 are connected to international networks.

A.1.2 Central Laboratory for Agriculture Climate (CLAC)

The Central Laboratory for Agriculture Climate was established in 1996 under the auspices of the Agriculture Research Center (ARC) and aims at maximizing the utilization of agro meteorological data in the agricultural sector.

A.2 Special Programs Addressing Atmospheric Observation

A.2.1 Air Pollution Monitoring

The Egyptian Environmental Affairs Agency (EEAA) was supported by Danida to establish an Environmental Information and Monitoring Program (EIMP)

A.2.2 Ancillary Atmospheric Observation

Some ministries and authorities in Egypt carried out ancillary activities that may be relevant to climate observation, in addition to being part of these agencies' official mandate.

B. Oceanographic Observation

It included Oceanographic measurement along the coasts of the Mediterranean and Red Sea like Tide Gauges, Automatic tide gauge, Wave gauges, The Cassette Acquisition System Wave Recorder (CAS), Operated Wave Suspended Recorder (OSPOS) and S4DW Wave-current Recorder.

C. Terrestrial Observation

C.1 Land use / Land Cover

Some institutions such as the Soil and Water Research Institute (SWRI), Agriculture Research Center, Ministry of Agriculture and Land Reclamation, National Research Center, and the General Organization for Physical Planning (GOPP) have carried out land use mapping and/or land use / land cover mapping on the national and/or regional levels using standard methodologies.

C.2 Hydrological Observation

Hydrological Observations in Egypt are one of the main responsibilities of the Ministry of Water Resources and Irrigation (MWRI) and its affiliated institutions. These observations include water quantity, quality, and demand and supply data.

D. Space – based Observations

Satellites provide useful measurement on land cover and land use, as well as spectral properties that can be used to estimate vital biological process and variables such as leaf area indices, soil moistures and biomes. In addition, satellites provide a great variety of data related to meteorology, oceanography and hydrology as well as links between these areas. Satellites have been in operation for a long time during which large data sets on several climates – related issues have been accumulated.

The following institutions deal with space – based observation:

D.1 General Meteorology Authority.

D.2 NOAA Satellite receiving station at the Desert Research Center.

D.3 National Authority for Remote Sensing and Space Sciences.

E. Databases:

The available databases relevant to systematic climate observation in Egypt are the following:

Meteorology data / Ozone, Agriculture Meteorological data, NOAA images, Land use / cover/ maps / images, Hydrological data, satellite images metadata, Air Quality and Marine water quality, Oceanographic data, Air quality in Greater Cairo region, Wind Atlas and Ancillary.

Gaps

Incomplete spatial coverage of existing networks, inadequate facilities due to high cost of some equipment or lack of proper logistics and proper collaboration between national institutions.

Needs

Cooperation protocols between different institutions working in the field of climate observation need to be developed. Monitoring stations- especially those with time data record – must continue. There is also a pressing need to organize and coordinate national efforts in order to develop an integrated systematic terrestrial observation network covering all elements of land use/ land cover and their changes. An electronic network system is urgently needed to connect local oceanographic measuring sites and overseas centers, to allow regional and international data exchange.

3.2.2- Study on the Assessment of the National Needs to Adapt to Climate Change in Egypt's Coastal Zones:

A general survey to test Egypt's vulnerability to the impact of climate change on the coastal zones was undertaken and the potential adverse impact on the rich resources of country's coastal zones outlined. Water, agriculture, tourist resources, health and socioeconomic systems in the coastal zone in particular are emphasized. Egypt's commitment to mitigation measures through surveying various measures to reduce emissions and conserve energy have also been highlighted.

Findings of the preliminary studies of vulnerability assessments of the coastal zone have been disseminated. These included vulnerabilities to the impact of sea level rise, in addition to normal vulnerabilities to other changes of climate. The adverse effect resulting from coastal inundation, saltwater intrusion, excessive erosion rates, soil salinization, deterioration of coral reefs and mangrove communities and coastal ecosystems have all been enumerated. Although no detailed assessments have been undertaken for all vulnerable areas, preliminary estimates indicate serious losses in the coastal cities of Alexandria, Rosetta, Port Said and tourist centers such as Hurghada and Sharm El Sheikh. Figures estimating the negative socio economic consequences and expected job losses over the next century are alarming.

Options of adaptation in the coastal zones have also been investigated. These include hard and soft protection measures, land use changes, integrated coastal zone management and economic incentives. Many of these aspects are site and community specific, and have not been investigated thoroughly. However, preliminary investigations indicated that hard structure protection measures are probably the least costly and most appropriate for short-term protection. Long-term protection measures include the most expensive land use changes and integrated coastal zone management (ICZM)

Needs of adaptation to the impact of the sea level rise in the coastal zones have also been

outlined. Shortages of large – scale monitoring and management institutional capabilities in the coastal zone has constituted a severe limitation for proper adaptation. Transfer of technology and capacity building are crucial needs.

Specific needs include support for regional monitoring, modeling and assessments as well as scientific and technical investigation of various options for adaptation and socio economic implications and awareness. Some specific projects have been suggested:

- Building a center for evaluating coastal zones and suggesting ways to protect them.
- Studying the land use strategies and increasing the agriculture of rice and fish farms.
- **Studying the models and expectations on the level of Mediterranean area and Nile delta area (?)**
- Increasing environmental awareness for decision makers
- Studying the elements of climate change effect on national projects.
- Studying the effect of climate change on the coral reefs.
- Studying the effect of sea level rise on the archaeological areas.
- Studying the possibility of setting up attractive areas for the employees, far from the affected areas.
- Studying the effect of the salt water on the coastal zones.
- Innovate a comprehensive approach for planning the coastal zones.

A- The Pilot Design:

The study has also proposed a project for coastal zone adaptation to establish a national adaptation center for the coastal zones through remote sensing/GIS. The rationale of the project is that priceless resources are about to be lost along the Nile Delta coast, if no plans are enforced and followed up by a strong monitoring system. In addition, the whole coastal zone is particularly vulnerable to the impact of climate change, including sea level rise and salt water intrusion. It is therefore necessary to establish a national monitoring, modeling and assessment center to identify changes of land use and monitor the coastal environment particularly in this area. High-resolution remote sensing and GIS techniques are now capable of carrying out this task. The center will also be in charge of modeling, strategic assessments and issuing recommendations to take adaptation measures.

A-1 Essentially the center is intended to help national authorities to:

- Strengthen regional and national capacity for identifying, assessing and monitoring changes in the coastal zone and carrying out impact assessments.
- Assess national priorities for adaptation, and develop a cost effective adaptation plan for vulnerable areas and follow up adaptation plans.
- Provide necessary data and information to investors, governorates and researchers concerning potential impacts of various projects on the coastal zones.
- Carry out research in cooperation with various concerned authorities related to monitoring and assessment of impact of climate change on the coastal zones.
- Help build up capacity of university graduates through education, orientation and training activities.
- It is proposed that the main tools will include remote sensing, GIS and decision support

systems.

A-2 Expected Results:

- Defining and following up plans and enforcing coastal protection.
- Identifying and assessing the sites of changes of land use along the coastal area. In addition, data will be made available to the planning authorities, which will upgrade their capacity for proper planning.
- Identifying environmentally hot areas and installing a system for early warning in case of an environmental problem.
- Developing and following up the implementation of an integrated coastal zone management plan to protect the coast and adapt to climate changes.
- Building capacities in the areas of remote sensing, geographic information systems, adaptation and the environment.
- Specific results concerning coastal problems of erosion, coral reef conservation and lakes management.

3.2.3- A Study on the consequences of Climate Change on Coral Reefs of the Red Sea:

The Egyptian Red Sea and its two Gulfs warrant special attention because they are not buffered by a large ocean of deeper waters; They are also of considerable conservation, scientific, economic and recreational values.

Coral reefs are one of the most threatened ecosystems in the world. Until recently, stresses caused by human activities, such as land-based sources of pollution and destructive fishing practices, were considered the primary dangers to coral reefs. While these problems still persist, the last two decades have witnessed the emergence of yet another potentially much greater threat. Coral reefs have been affected, with increasing incidence and severity, by coral bleaching, a phenomenon associated with a variety of stresses, especially increased sea water temperatures. Severe and prolonged bleaching can lead to widespread coral mortality.

This study investigated the possible effects of climate change on the marine and coastal environment of the Egyptian Red Sea, with emphasis on coral reefs and people. This has been achieved by: description of the Red Sea, presenting the state of the environment, expected climate change and sea level rise and potential impacts. Mitigation measures were discussed by reviewing the global status of coral reefs, as well as international and regional efforts to preserve them. A specific work plan for coral reef bleaching and management strategies are presented together with information on regional and national institutions dealing with coral reef ecosystems.

Environmental impacts resulting from natural stresses include: extreme temperature, bioerosion, episodic rainfall and massive discharge of silt-laden floodwater wave turbulence, turbidity and sedimentation. Environmental impacts resulting from human activities may include: loss of coral areas and mangroves because of coastal construction, decline in number of fish and invertebrate abundance because of tourist activities, coral degradation and alteration of coastal communities, changes in water quality, habitat reduction for breeding turtles, local eutrophication and many other impacts.

The temperature increase in the Red Sea was expected to be less than the average global temperature increase. On the other hand, the increase in precipitation rate in the Middle East region was expected to be larger than the average increase worldwide.

The effect of sea-level rise would appear much easier to forecast but no clear indication of the expected regional sea-level rise scenario has evolved. Assuming a global sea-level rise of 20 cm, the local sea-level rise could be much more than this. The global warming might lead to the melting of the glaciers cover over the high mountains in East Africa. The melted water would drain into the Indian Ocean, thus contributing to the rise of its level, which might have an impact on the water exchange between the Red Sea and Gulf of Aden and hence influence the water circulation pattern in the Red Sea.

In many areas, the shoreline retreat from rising sea-level rise would be greater than from inundation alone. This would eliminate existing recreational beaches at the major resorts of the Red Sea, threaten wildlife, mineral resources development, and human settlement and harbors facilities. Capital values at loss from shoreline retreat and especially from flooding would be of enormous proportion; the proper functioning from infrastructure facilities directly exposed to the sea would be disrupted and a great number of people may have to retreat especially if the Suez Canal region is threatened by flooding.

Climate changes that lead to sea level rise would considerably affect coastal zones of the region. The direct effect of inundation would produce a large loss of inhabited areas, wetlands and low islands of the Red Sea. Any sea-level rise would allow waves to cover the coral reefs, increasing coastal vulnerability to erosion and storms, at least until reef growth could catch up with the sea-level. The rise in sea level might also lead to destruction (submersion) of some islands in the Red Sea.

The marine coastal habitats of the Red Sea, particularly coral reefs, sea grass beds and mangroves appear to be close to their physiological limit. Temperature rather than salinity seem to be the main limiting factor for the distribution and development of these habitats, particularly in the northern part of the Red Sea. Corals, mangroves and sea grass beds are sensitive to temperature and their adaptive capacity varies according to localities. These conclusions are based on historical record in this regard and might explain why coral bleaching in the Red Sea is not a phenomenon associated with global warming as documented elsewhere (for example in the Arabian Sea). Other possible effects associated with sea-level rise might include shifts in distribution, donation and community structure. The combined effects of both global warming and sea-level rise might lead to extend the geographical distribution of such habitats possibly into the Mediterranean Sea, provided suitable substrate is available.

A- Vulnerable Areas/Systems and Future Strategies

Coastal zone management problems were already critical in many parts of the Red Sea. The potential impacts of predicted global changes are diverse and important for human settlements in the coastal zones. The major impacts would follow from one or more of the following main physical-mechanisms: shoreline retreat, flooding and flood risk, direct exposure to coastal environment and salinity intrusion and seepage.

Response strategies must be based on climate change scenarios, expected impacts and future plans for the coastal areas of the region.

There are two types of response strategies - preventive and reactive. The preventive strategy addresses itself to protecting present investment, while the reactive strategy seeks to adjust, react and adapt to changes as they arise. The preventive strategy requires prior knowledge of economic worth of present investment and its relative significance vis-à-vis the cost of erecting preventive structures or creating new ones if damaged. The reactive strategies respond to events as need arises and are basically "adaptive". Resettlement of populations is a reactive strategy and need not be done before the event. However, reactive strategies need to be based on predictable development so that planning can be made to deal with developments.

Research programs to monitor water resources and natural coastal resources should be designed in order to evolve adjustment activities to climate change. It is important to mount educational programmes to sensitize the coastal area communities to the risks posed by expected climate change and sea level rise. This would lead to the development of a state of preparedness in coastal settlement communities for any reactive strategy in the event the expected impacts occur.

It was suggested to form a national task force to study the impacts of climate change on the coral reefs and related ecosystems. Meanwhile, action by the government should be taken to minimize stress to the Red Sea marine and coastal ecosystems. To be most effective, an early and sensitive warning signal of climate change, coral reef bleaching events must be monitored on site through remote sensing, and investigated and reported by the scientific community. In order to best inform future decisions, the research findings must then be translated into effective public policy and communicated to donor agencies.

B- Work Plan:

A specific work plan addressing the current status of coral reefs, with emphasis on coral bleaching is prepared. It is hoped to serve harmonize ongoing initiatives addressing threats that face coral reefs (both natural and man-made), prioritize existing activities and mobilize funding toward conservation and sustainable use of coral reefs.

It is recommended that the task team include representatives from the following institutions: Egyptian Environmental Affairs Agency (EEAA), universities, particularly Suez Canal and Al-Azhar, National Authority for Remote Sensing and Space Sciences (NARSSS), Egyptian Meteorological Authority (EMA), Tourist Development Authority (TDA), General Authority for Development of Fish Resources (GADFR), General Authority for Urban Planning (GAUP) and governorates of the Red Sea and South Sinai. The primary objective of this task team over the next three years is to implement the specific work plan on coral bleaching, each authority in its field of expertise with supervision of EEAA. Funds are to be provided for institutional capacity training and equipment.

In addition to the specific work plan on coral bleaching, coral reef management strategies are recommended. These include: marine protected areas, reef fisheries, tourism, integrated coastal management, reef restoration, and monitoring and research. The coral reef management

strategies can be implemented through the national committee for coastal zone management and the Nation Conservation Sector (NCS) of EEAA.

3.2.4- Study on Land Use, Land-Use Change and Forestry in Egypt:

The mitigation of global climate change through forestry was first proposed in the 1970s. As a consequence of worldwide concern about global warming, the Framework Convention on Climate Change (FCCC) was adopted in 1992. This Convention aimed at stabilizing the concentration of greenhouse gases in the atmosphere in an effort to reduce human-induced disturbances to the global climate system. The industrialized countries and countries in transition that are parties to the FCCC, committed themselves to carrying out national inventories of greenhouse gas emissions and carbon sinks, and to working – voluntarily - towards the reduction of emissions.

At the third meeting of the Conference of the Parties, held in Kyoto, Japan in December 1997, an additional legally binding instrument was adopted: the Kyoto Protocol to the Framework Convention on Climate Change. Thirty-nine developed countries agreed to limit and reduce their emissions of greenhouse gases between 2008 and 2012 by at least 5 percent compared with 1990 levels.

Parties can meet this commitment by reducing sources, protecting or enhancing sinks of greenhouse gases. The Kyoto Protocol foresees the inclusion of changes resulting from direct human-induced land use change and forest activities, limited to afforestation, reforestation and avoidance of deforestation.

The Kyoto Protocol also sets up a framework for the transfer of emission credits between parties. Three flexible mechanisms for the mitigation of climate change were agreed upon:

- Trading with quantified emission limitations and reduction obligations (QUERRO),
- Joint Implementation (JI) of emission reduction projects, and
- The Clean Development Mechanism (CDM) between the parties and other countries.

The Kyoto Protocol stipulates that parties take into account afforestation, reforestation, and deforestation and other agreed land use, land-use change, and forestry (LULUCF) activities to meet their commitments under Article 3.

To implement the Kyoto Protocol, issues related to LULUCF will have to be considered. Relevant issues may include:

- Definitions, including land-use change, forests, forestry activities, afforestation, reforestation, and deforestation, human-induced, and direct human-induced carbon stocks.
- Methodological issues, such as rules for accounting for carbon stock changes and for emissions and removals of greenhouse gases resulting from LULUCF activities
- Approaches such as statistical sampling, associated with identifying lands with activities defined under Article 3.3, approved of under Article 3.4, or

associated with project-based activities under the Kyoto Protocol, and measuring and estimating changes in carbon stocks and greenhouse gases.

- Verification procedures.
- Determining how and which additional activities pursuant to Article 3.4 are included.
- Determining how to link the first and subsequent commitment periods.
- Determining how and which project-based activities are included.
- Determining what improvements, if any, are needed to be introduced to the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories and the Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories.
- Determining which, if any, national and/or international sustainable development criteria could be associated with Articles 3.3 and 3.4 and project-based activities.

The study discussed these issues in light of the analysis of LULUCF in Egypt.

A- Analysis of the IPCC Special Report on Land-Use, Land-Use Change and Forestry:

This study was prepared in response to a request from the United Nations Framework Convention on Climate Change (UNFCCC) Subsidiary Body for Scientific and Technological Advice (SBSTA).

The study report was submitted by IPCC to the parties of the twelfth session of (SBSTA) in Bonn, Germany in June 2000. This special report discussed the global carbon cycle and how land use and forestry activities currently affect standing carbon stocks and emissions of greenhouse gases. It also forecasted future carbon uptake and emissions that might result from employing varying definitional scenarios and carbon accounting strategies, linked to the Kyoto Protocol, within the forestry and land-use sectors.

The main report consists of a summary for policymakers, six chapters and three annexes. The summary for policymakers briefly refers to the topics of the main report of interest to those who were involved in planning and decision-making.

The first chapter titled "Global Perspective" deals in details with the biogeochemical cycles of greenhouse gases, the carbon budget of terrestrial ecosystems and the influence of land use on greenhouse gas sources and sinks.

Chapter 2 of the report, entitled "Implications of Different Definitions and Generic Issues", describes the components of the global carbon cycles and the issues to be considered in accounting for carbon fluxes to and from the atmosphere.

"Afforestation, Reforestation, and Deforestation (ARD) Activities" is the title of Chapter 3. In line with Article 3.3 of the Kyoto Protocol, this chapter focuses on direct human-induced (DHI) land-use change and forestry activities that parties must account for. These activities include afforestation, reforestation, and deforestation (ARD). It also deals with greenhouse gas

(GHG) emissions by sources and removals by sinks in the first commitment period. In this chapter, definitions, terminologies and decisions on carbon accounting rules are discussed. Finally, it identifies issues, describes various options to address them, and summarizes the implications of the options.

Chapter 4, which deals with "Additional Human-Induced Activities", addresses the activities related to land use, land-use change, and forestry (LULUCF) other than those covered by Article 3.3 of Kyoto Protocol. It derives a set of core questions and arranges them in a sequence designed to help decision makers' work through issues such as: which additional human-induced activities should be included and how these activities should be defined, measured, reported, monitored, and verified.

Chapter 5 titled "Project-Based Activities" reviews projects that were based on land use, land-use change, and forestry as a required approach for putting some provisions of the Kyoto Protocol into effect. The project-related issues are analyzed in this chapter with two aims in mind. The first is to provide policymakers and others with broad guidelines about the nature of LULUCF projects. The second aim is to provide information to policymakers to help them develop internationally agreed upon rules concerning a variety of challenging project-specific issues.

The final section, Chapter 6, is entitled "Implications of the Kyoto Protocol for the Reporting Guidelines". Under the Kyoto Protocol the revised guidelines for National Greenhouse Gas Inventories provide the basis for estimating and reporting anthropogenic emissions by sources and removals by sinks of greenhouse gases (GHGs). This chapter suggests options for improving the guidelines in relation to the verifiability and transparency of reported data.

Annex B includes Acronyms, Abbreviations, and Units used in the report. It introduces authors and expert reviewers of the report, while annex C includes a List of Major IPCC Reports.

The study proposed a project called "Pilot project for Shelterbelt Tree Plantation and Carbon Sequestration Using Wastewater in Greater Cairo, ARE". The project emphasizes that Egypt has a total area of 1 million Km out of which 96% is bare desert. It is estimated that 98% of the population live only on 5% of the land area in the Nile Delta and Valley. This distribution fails to support the present population and the problem is aggravated by the shrinking of the cultivated land area due to urban and industrial expansion.

B- Pilot Project:

Rainfall in Egypt is very low and unpredictable. The average quantity for the whole country is 10 mm concentrated during the winter season (mainly in December and January). The rest of the year is a long, hot and dry period. Alone, rainfall is insufficient to meet the needs of agriculture and afforestation.

Egypt is subject to strong wind during the different seasons of the year. The prevailing wind is Northern, Northwestern or Northeastern. During spring, a strong eastern or western wind, called *Khamasin*, blows from the South

Unfortunately, due to climatic and soil conditions in Egypt, a large part of Egypt's territory is threatened by desert creep mainly through moving sand. The total land area is subject to the hazard of sand encroachment that presents serious problems to human and environmental conditions.

Greater Cairo is located between the Eastern and Western Desert and extends for a distance of about 40 km. Close to Greater Cairo, there is a number of satellite cities such as 10th of Ramadan, 6th of October, and Badr. Effective measures to protect the city from the hazard of sand encroachment are urgently needed.

Afforestation has been applied in several countries of the world as an effective means for sand movement. This method protects the cultivated land, improves climatic conditions. It also enhances the status of the people and encourages them to increase their productivity.

New tree planting in afforestation or agro forestry scheme results in carbon fixation during tree growth, i.e. the creation of new carbon sinks. In the context of the Kyoto Protocol, these activities conform to Article 3.3. Carbon fixation can also be achieved by improving the growth rate of trees. This can be achieved through silvicultural treatments such as irrigation, thinning, weeding or fertilization. Since substantial amounts of carbon are stored in soils, management practices that promote an increase in soil organic matter can also have a positive effect. These activities are in line with the spirit of Article 3.4 of the Kyoto Protocol.

As the demand for water increases, water re-use by agricultural irrigation as well as wastewater treatment has become an increasingly important source of water. The safest re-use of wastewater is in timber-tree irrigation. An ambitious plan for establishing Waste Water Treatment Plants (WWTP) has been completed (Zeinin WWTP, Helwan WWTP, Gabal El_Asfar WWTP, ElBerka WWTP, Abou-Rawash WWTP, and Balaas WWTP) and generate about three million liters of treated wastewater environmentally suitable for irrigation, particularly of trees. Using treated wastewater in irrigation increases the soil organic matter, which in turn increases the stored carbon.

B-1 Objectives:

- To establish an appropriate tree plantation on the desert areas of the west and/or the west side of Cairo according to the availability of land, wastewater, and soil parameters. The proposed area is 1000 feddans (= 420 ha).
- To assess carbon sequestration benefits of this plantation and predict changes of the carbon in the soil, for potential generation of carbon credits for emissions trading in Egypt.

B-2 Pilot Project Design:

The project was divided into two phases as follows:

First phase: (Duration two years)

- Assessment of the existing activities.
- Establishing a nursery with partial shade and with necessary greenhouses and equipment for storing and for delivering water to the individual plants. Seeds/seedlings will be procured and raised in pots in the nursery.
- Field surveying of the soils in the proposed locations to select the appropriate ones.

- Designing and establishing irrigation systems in the locations.
- Planting seedlings in the permanent sites.
- Organizing a workshop for specialists of all environmental organizations in Egypt.

Second phase: (Activities to be implemented over 15 years)

- Applying silvicultural practices (irrigation, thinning, fertilization, weeding, etc.).
- Establishing of experimental research sites to measure future changes in soil carbon, and measure carbon sequestration by trees.
- Increasing environmental awareness among workers in the city and specialists through films, symposiums, booklets and pamphlets, and training courses.

C- Projected Environmental Impacts:

The impacts include the reduction of air pollution, sand movement, and soil erosion, and increasing biodiversity.

D- Proposed Spacing Between Rows and Between Trees:

According to species and soil type:

- Between rows: 2-4 m (3 m in average).
- Between trees: 3-5 m (4 m in average).
- The width of shelters: 15 m.

E- Proposed Tree Species:

- *Casuarinas glauca*
- *C. Cunninghamiana*
- *Eucalyptus camaldulensis*
- *E. Gomphocephala*
- *Dalbergia sissoo*
- *Acacia saligna*
- *Stenophylla*
- *Tamarix aphylla*
- *Ficus retusa*
- *Zizyphus spina-christi*
- *Prosopis juliflora*
- *Khaya senegalensis*

3.3- National Training Seminars and Workshops:

3.3.1- Workshop on the Assessment of the technological needs for adaptation to climate change:

By the end of second phase of the capacity building project in the field of climate change, a workshop entitled "Technological Needs Assessment" was held at the Four Seasons Hotel on 1st December 2001 to present the technological needs in the coastal zones, coral reefs, and systematic observation.

A- The Aim of the Workshop:

The aim of this workshop was to come up with a documented national needs requirement for mitigating climate change impact and implementing adaptation measures. The goal is to minimize the negative effects of climate change within certain areas particularly the coastal zones, and coral reefs. It also presented the needs assessment for systematic climate observation in Egypt. These needs were included in the second national communication.

B- The Workshop included:

Presentation of reports resulting from the second phase of the capacity building project with the aim of identifying national technological needs. These are:

- Assessment of climate change impacts on coastal zones.
- Assessment of climate change impacts on coral reefs.
- Climate observation systems in Egypt: What is available and what is needed?

C- Conclusion:

C-1) Coastal Zones National Priorities:

- Transfer of climate-friendly technologies since both mitigation and adaptation aspects are essential for Egypt to face the challenges posed by climate change to coastal zone.
- Capacity building on vulnerability assessments and adaptation are urgently needed.
- Establishing and strengthening nation-wide systematic observation and monitoring networks for baseline sea level changes, land use changes, and providing training in climate change modeling.
- Building and developing a national geographic database for collection, analysis, interpretation and dissemination of coastal data concerning climate change strategic impacts and adaptation technologies.
- Designing an awareness program for stakeholders, decision-makers and NGOs in the coastal zones.

Adaptation Methods:

- Beach nourishment is immediately required for protection of eroding beaches.
- Fixation of the sand dunes.
- Building of water breaks
- Integrated coastal zone management.

National Needs:

- Enforcing law 4 of 1994.
- Enhancing institutional capacity and networks.
- Establishing a center for land use monitoring, modeling and decision support.
- Technology transfer, education and awareness programs.
- Establishing a sub committee for ICZM for each lake.
- Establishing a greenbelt and agro- forestry.
- Managing the northern lakes.
- Water harvesting and wastewater treatment.
- Better control of land based sources of pollution.
- Developing the private, low technologies, and employment intensive opportunities.

- Establishing awareness campaigns for decision-makers, stakeholders and NGOs.
- Researching a salt tolerant plant treatment, re-use and monitoring.

National Project for Adaptation:

To address national problems of vulnerabilities on the coastal zones, the following specific projects for adaptation address some problems of main concern:

- Establishing a large-scale coastal monitoring, assessment and adaptation center.
- Strategic environmental assessment of land use.
- Developing studies of regional climate models and regional scenarios for assessment of the climate change impact on coastal zones.
- Developing coastal database, modeling capability and decision support systems for integrated coastal zone management planning.
- Upgrading awareness of stakeholders, decision-makers and NGOs in highly vulnerable areas of the coastal zones.
- Vulnerability studies and prioritization of adaptation measures to local coastal problems.
- Vulnerability studies and prioritization of adaptation measures of the northern lake ecosystems to the impacts of climate change.
- Vulnerability studies and prioritization of adaptation measures of the coral reefs ecosystem to the impacts of climate change.
- Vulnerability assessments of salt water intrusion in the coastal reef ecosystem.
- Investigating the possibility of creating inland high intensive employment centers to attract manpower away from vulnerabilities and highly-populated coastal areas.
- Vulnerability studies and prioritization of adaptation measures for preservation of archaeological sites and cultural heritage in the coastal zones.

C-2) Climate Change Impact on Coral Reefs National Needs :

In this context, there are some needs to:

- Stabilize and reduce green house emissions.
- Preserve the physical integrity of the marine environment.
- Reduce sediment, chemical, and solid waste contamination of marine waters.

Monitoring:

- Improve and increase information resulting from remote sensing technologies.
- Support satellite – based monitoring of sea surface temperature change through the "hotspots" early warning.
- Expand and coordinate internationally rapid response teams and long term monitoring to measure bleaching and mortality.
- Support the global coral reef monitoring network (GCRMN) and associated regional networks, as well as expanding the network as resources permit.

Scientific research:

No doubt that scientific research is very important to:

- Establish better baseline data.
- Coordinate multidisciplinary research programs that investigate the relationships between large scale bleaching events and global climate change.
- Coordinate the targeted research programs investigating the long-term effects of coral

bleaching and mortality on ecological, social, and economic systems.

- Coordinate research programs that investigate the physiological tolerance and adaptation capacity of corals to acute and chronic stresses.
- Develop dynamic predictive models of climate and ecological process and socio economic factors.
- Coordinate these research programs internationally through bilateral and multilateral programs and instruments.

Policy:

The Egyptian policy is based on:

- Emphasizing and appreciating that the coral reefs can be monitored as useful bio indicator of environmental programs and instruments.
- Working within the framework convention on climate change to identify additional ecosystems especially sensitive to climate change and monitoring them for climatically-induced damage.
- Applying the lessons learned from the 1998 mass coral-bleaching event to the next stages of climate policy, while implementing current commitments to reduce greenhouse gas emissions.
- Developing an integrated strategy to address these issues through the United Nations system, as well as other international programs and treaties.

Communication:

- Developing a communication strategy to address diverse political and public needs.
- Substantial financial support to act on these priorities. Since issues of climate change are global and long term in scale, governments around the world need to work together to make funds available for the implementation of these important initiatives.

C-3) Climate Observation Systems Gaps:

Following are the main gaps in this area:

- Incomplete geographical coverage of the monitoring and observation system.
- High cost of the marine stations.
- Difficulty of protecting the marine stations due to insufficient guarding.
- There is no national system for climate monitoring and observation.

National Needs:

In this context, there are some needs to:

- Complete the geographical coverage of the climate monitoring and observations systems.
- Strengthen the information exchange between different organizations and institutions.
- Enhance national capacities in different related fields.
- Connect all responsibilities and related organizations in a focal point, which can coordinate all the data.
- Secure funds needed to support different activities.

3.3.2- Workshop on Coral Reefs , Nature Conservation and Management Center, Sharm El Sheikh, South Sinai, 21 May 2001.

A- The Aim of the Workshop

- Building capacity in the field of climate change and its effect on coral reefs.
- Identifying the negative effects of climate change on coral reefs
- Increasing awareness among divers and rangers about the climate change phenomenon and its effects on coral reefs.

B- Conclusions and Recommendations:

The main conclusions were as follows:

- There is no way to stop the climate change phenomenon.
- Climate change is a natural phenomenon that has negative effects on coral reefs. The only solution is to stop the additional stress on coral reefs caused by human activities and pollution. This can be done through:

Building capacity of divers and training them to report their observations to the Egyptian Environmental Affairs Agency.

Divers should learn how to secure the reefs and deal with these systems correctly.

- This can be carried out through:
 - Train divers and rangers.
 - Use reef check model, which is easy to use.
 - Enhance special internet sites for divers.
 - Enhance research concerning the rehabilitation of coral reefs
 - Identify needs and be ready to request funds to fulfill them.
 - Maximize the use of remote sensing for coral reefs applications.
 - Cooperate with remote sensing experts and biomarine experts.
 - Train on the GIS systems.
 - Train in the field of biological diversity of marine and ecosystems.
 - Secure financial and technical support.
 - Policy reform.

3.3.3- Workshop on Systematic Observation in Egypt, Shepherd hotel, Cairo, 6 August 2001.

The aim of this workshop was to present the report of the national needs for monitoring and observing the climate, including different sectors such as meteorology, space, land use change, green cover, and oceanography. Workshop participants also received the inputs of the different stakeholders to include them in the report and ensure that it reflects the actual available systems and actual national needs.

The report covered the climate system regarding meteorological and atmospheric observation, oceanographic observation, terrestrial observation including land use and land over and hydrological observation, space – based observation, and different databases. It also included the national needs of the systematic observation systems.

Workshop participants represented the Meteorological Authority, water, soil and

environmental institutions, the National Authority for Remote Sensing and Space Science, the United Nations Development Program and different ministries.

During the discussions several important issues were raised, including:

- Data is available but not standardized.
- There are many gaps in the systematic observation of land use, land cover observation systems and oceanographic observation systems.
- The meteorological observation system is strong compared to other national systems.
- The Meteorological Authority is the only agency connected to the international grid.
- The oceanographic observation systems are characterized by discontinuity, incomplete coverage and limited measurements for just tides and waves.
- There are no stations within the Red Sea area.
- The Nile Delta is the main concern of oceanographic observations.
- Some tide gauges were stopped.

The workshop concluded that it is highly important to construct an integrated national system for monitoring and observing the climate on the national level. This should be accomplished in cooperation between different organizations in order to maximize the use of available data and information on the national level.

3.3.4- Workshop on Land Use and Land Change Framework:

As mentioned above, the analysis of the IPCC report on land use, land use change and how Egypt can make use of the findings of the report were discussed during the workshop held on 20th October 2001.

3.4- International Cooperation on Climate Change:

During the period 1995-2001, Egypt actively participated in the seven sessions of the international Conference of Parties for the Framework Convention on Climate Change.

Within the life time of this project, Egypt participated in the sixth conference of the Parties, which was held in the Hague in November 2000. However, it failed to achieve its aims and delayed its endeavors to the extended sessions held in Bonn during June 2001.

Finally Egypt participated in the seventh conference of the Parties held in Marrakech in November 2001, which resulted in the Marrakech declaration. It also took part in several meetings for Subsidiary Bodies of Scientific and Technological Advice (SBSTA) and Subsidiary Body for Implementation. (SBI).

During all the above – mentioned official meetings, Egypt played an active role in the negotiations processes, in coordination with G77 and China.

Egypt also participated in a number of climate change related conferences and workshops, such as the meetings of the consulting group of experts in charge of preparing a national communication in developing countries. It also participated in several workshops related to land use, land use change and forestry activities, and others related to building capacities for negotiators in Africa. In addition, Egypt participated in several global environmental facility initiatives related to capacity building. Specifically, it began drafting a proposal for a project entitled National Capacity Self Assessment (NCSA), in cooperation with the United Nations

Development Program, to identify capacity building needs in the field of climate change, biodiversity and desertification.

Conclusion

Egypt is responsibly facing the challenges of climate change. It is taking proactive measures to maintain its sustainable economic development and protect its future generations from serious threats that will increase in the absence of appropriate actions taken today.