

# UNDP Project Document Format

Government of Egypt

United Nations Development Program

## ENABLING ACTIVITIES FOR THE PREPARATION OF Egypt's SECOND NATIONAL COMMUNICATION TO THE UNFCCC

### Brief description

This project *aims* at enabling Egypt to prepare and report its Second National Communication with the Conference of the Parties (COP) of the UN Framework Convention on Climate Change (UNFCCC) according to 17/CP.8 and other guidance provided. It will be a follow up of previous studies already identified under a stocktaking exercise. The project will be working under a priority area / category selection approach in order to allocate resources in the most effective manner. The *main components* of the project are: (a) an inventory of greenhouse gases for the year 2000 and time series 1990-2000; (b) an update of analysis of potential measures to abate the increase in greenhouse gas emissions in Egypt; (c) an assessment of potential impacts of climate change in Egypt and adaptation measures; (d) preparation of the Second National Communication of Egypt and submission to the COP. In addition, public awareness activities and stockholder consultations will be cross-cutting along the overall course of this exercise. Therefore, the preparation of the Second National Communication is expected to enhance general awareness and knowledge on climate change-related issues in Egypt, and help taking them into account in the process of national planning and policy.

## Signature Page

**Country: Egypt**

UNDAF Outcome(s)/Indicator(s):  
(Link to UNDAF outcome., If no UNDAF, leave blank)

Improved Capacity of National/Sectoral authorities to plan and implement integrated approaches to environmental management and Energy Conservation

Expected Outcome(s)/Indicator (s):  
(CP outcomes linked t the SRF/MYFF goal and service line)

Energy and Environment for Sustainable Development  
Framework and strategies for Sustainable Development

Expected Output(s)/Indicator(s):  
(CP outcomes linked t the SRF/MYFF goal and service line)

Egypt's SNC finalized / publication of SNC

Implementing partner:

Ministry of State for Environmental Affairs

Other Partners:  
(Formerly implementing agencies)

Programme Period: 2002 - 2006  
Programme Component: Enabling Environment Unit  
Project Title: Enabling activities for the preparation of Egypt's second national Communication to the UNFCCC  
**Project ID:** 00042122  
Project Duration: 3 years (February 2006 – February 2009)  
Management Arrangement: NEX, GEF Executing Agency:  
Ministry of State for Environmental Affairs

Budget	\$ 405,000
General Management Support Fee	
Total budget:	\$ 405,000
Allocated resources:	_____
• Government	_____
• Regular	_____
• Other:	_____
• In kind contributions	_____
Unfunded budget:	_____

**Agreed by:**

H.E. Amb. Abdelhamid Mahmoud Soleiman, Director, Department of International Cooperation for Development, Ministry of Foreign Affairs (MOFA)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Agreed by:**

Dr. Mohamed Sayed Khalil, Chief Executive Officer, Egyptian Environmental Affairs Agency, (EEAA)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Agreed by:**

Mr. Antonio Vigilante, Resident Representative, United Nations Development Programme (UNDP)

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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## Acronyms

APF	Adaptation Policy Framework
APR	Annual Progress Reports
CCU	Climate Change Unit
CDM	Clean Development Mechanism
CGE	Consultative Group of Experts
COP	Conference Of Parties
EER	Energy and Environment Review
FSc	Faculty of Science
GDP	Gross Domestic Production
GEF	Global Environmental Facility
GHG	Greenhouse Gas
GoE	Government of Egypt
GPG	Good Practice Guidance
INC	Initial National Communication
Information & PA Assistant	Information & Public Affairs Assistant
IPCC	Intergovernmental Panel on Climate Change
LUCF	Land Use Change and Forestry
MALR	Ministry of Agriculture & Land Reclamation
MDGs	Millennium Development Goals
MFTI	Ministry of Foreign Trade and Industry
MSEA	Ministry of State for Environment Affairs
MOHP	Ministry of Health & Populations
MFTI	Ministry of Foreign Trade & Industry
MoTR	Ministry of Transport
MoT	Ministry of Tourism
NC	National Communication
NCSP	National Communication Support Program
NCSU	National Communication Support Unit
NGOs	Non-governmental Organizations
NPM	National Project Manager
NSS-CDM	National Strategy Study for Clean Development Mechanism
PIU	Projects Implementation Unit
PSC	Project Steering Committee
QA/QC	Quality Assurance/Quality Control
QPRs	Quarterly Progress Reports
SNAP	Support for National Action Plan
SNC	Second National Communication
SRF	Strategic Results Framework
TLs	Team Leaders
TORs	Terms Of Reference
TRs	Technical Reports
UNDP	United Nations Development Program
UNDP-CO	United Nations Development Program Coordinator
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
V&A	Vulnerability and Adaptation
VTT	Valtion Teknillinen Tutkimuskeskus (Technical Research Center of Finland)



## Part 1: Elaboration of Narrative

### 1.1 Situation Analysis

1. Egypt is located in northern Africa, bordering the Mediterranean Sea between Libya and Gaza Strip. To the south it shares a border with Sudan. The country has a total area of 1,001,450 sq km, with 3,500 km of coastline facing the Mediterranean in the north and the Red Sea in the east. The dominant feature of the northern coastal zone is the low lying parts of the River-Nile delta, with its large cities, industry, flourishing agriculture and tourism.
2. The delta and the narrow valley of the Nile comprise 5.5% of the area of Egypt, but have over 98% of its population and its agriculture. With the exception of small areas of cultivated land in the oases of the western desert, areas located in the western borders of Delta region (Cairo-Alex desert road), area located in the western borders of Nile valley in upper Egypt (Bani Souaif & Suhag), Toshka, the coastlands west of the delta, and in Northern Sinai, the rest of Egypt is desert.
3. Egypt's Mediterranean coast and the Nile Delta have been identified as vulnerable regions to sea level rise, in the second assessment report of the Intergovernmental Panel on Climate Change, IPCC (1995).
4. Egypt is mostly arid area, characterized by hot dry summers, moderate winters & small amounts of rainfall over the Northern coastal area. The country is characterized by particularly good wind regime with good sites for Renewable Energy Generation along the Red Sea & Mediterranean Coasts.
5. Egypt is a unique country with respect to its water resources, irrigation system and agricultural environment. The River Nile provides Egypt with more than 95% of its water budget. The remaining 5% are particularly valuable in their localities (e.g.: ground water in oasis).
6. Population in Egypt at the beginning of the 19<sup>th</sup> century was almost 2.5 million. At the beginning of 21<sup>st</sup> century population in Egypt became as large as 70 million, more than 28 fold increase in 200 years. The third unique domain in this equation is that the country's water budget did not actually change. The natural flow of the River Nile is almost the same with an average of 84 billion cubic meters (bcm) at Aswan every year. Obviously high and low flows occur every now and then.
7. Economic conditions in Egypt have improved considerably over the years since the baseline 1990/91 where real GDP growth Rate was 3.7 %. By the end of fiscal year 1998, the Growth rate reached 5%, fueled primarily by private sector in investment through continued rapid privatization. The GDP Growth Rate in 2002/2003 was 3.1%.
8. The government formulated, with financial and technical support from the World Bank, the National Strategy Study for Clean Development Mechanism (NSS-CDM). One of the objectives of this strategy was to address sustainable development criteria through abatement of GHG emissions.
9. The Egyptian Government considers that management of the environment to be an integral component of poverty reduction, and is working to achieve an integrated rural development that includes the protection and improvement of use of natural resources. Environmental policies during the coming period are directed at halting environmental degradation, creating conditions for rehabilitation of polluted areas and promoting the sustainable use of natural resources. The Law No. 4/1994 on Environmental Protection forms the basis for environmental management in Egypt. The law addresses the prevention and reduction of pollution, sustainable management of natural resources, and provides binding provisions for environmental impact assessment.
10. Currently the government, with support from UNDP, is engaged in a continued participatory dialog and advocacy to integrate the Millennium Development Goals (MDGs) into the Egypt's National Strategy (NS) & Capacity Development.

11. UNDP is assisting Egypt in determining both national and regional Millennium Development Goals targets and indicators as well as monitoring progresses made toward achieving these targets. UNDP and the Ministry of State for Environmental Affairs (MSEA) have played a significant role in increasing national capacities for integrating environmental conventions into planning and policies.
12. Since 1995, UNDP support to Egypt in terms of sustainable environmental development included assistance towards compliance with international environmental conventions, aiming at:  
(a) promoting environmental governance in mainstreaming sustainable development and implementing relevant policy, legal and regulatory measures, and  
(b) capacity development to implement global environmental conventions primarily through *Egypt's First National Communication to the UNFCCC*.

### **1.2 Strategy**

13. This project addresses one of the means that aim at " *Strengthening the Ministry of State of Environmental Affairs (MSEA) to assist the Government in achieving global environmental concerns and commitments.*
14. This project will enable Egypt to prepare the Second National Communication to the Conference of Parties in accordance with Article 12 of the UNFCCC after the successful completion and submission of the First National Communication to the COP5 in 1999. It will develop and enhance national capacities to fulfill Egypt's commitments to the Convention on a continuing basis; enhance general awareness and knowledge of government planners on issues related to climate change and reduction of greenhouse gas emissions, thus enabling them to take such issues into account into national development agenda; and mobilize additional resources for projects related to climate change and mitigation of greenhouse gases; projects which may be eligible also for further funding or co-funding by GEF or other multilateral or bilateral organizations.
15. By addressing coastal areas, water resources, agriculture & new reclaimed areas as the main vulnerables to the expected climate change, the project is addressing the most critical issues of concern for climate change impacts in Egypt.

### **1.3 Management arrangements**

16. The project will be executed through the Ministry of State for Environmental Affairs, which will be serving as Governmental body. The Climate Change Unit established in the Egyptian Environmental Affairs Agency (EEAA) would serve as implementation body of such project. The Project Steering Committee (PSC) will provide guidance and support to the project. For more information about management arrangements, see appendix F.

### **1.4 Monitoring and Evaluation**

17. Monitoring responsibilities and events: A detailed schedule of project reviews meetings will be developed by the project management, in consultation with project implementation partners and stockholder representatives. Such a schedule will include: (i) tentative time frames for Steering Committee Meetings, (or relevant advisory and/or coordination mechanisms) and (ii) project related Monitoring and Evaluation activities.
18. Monitoring of implementation progress will be the responsibility of the Project Manager, based on the project's Annual Work plan and its indicators. The Project Team will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely fashion.
19. Periodic monitoring of implementation progress will be undertaken by the UNDP-CO through quarterly meetings with the project proponent, or more frequently it deemed necessary. This will allow parties to take stock and to resolve any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

20. Project Monitoring Reporting The Project Coordinator in conjunction with the UNDP-GEF extended team will be responsible for the preparation and submission of the following reports that form part of the monitoring process.

**(a) Inception Report (IR)**

21. A Project Inception Report will be prepared immediately following the Inception Workshop. It will include a detailed First Year Work Plan divided in quarterly timeframes detailing activities and progress indicators that will guide implementation during the first year of the project. The report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including monitoring and evaluation requirements to effectively measure project performance during the 12 months time-frame.

22. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may effect project implementation.

23. When finalized the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the IR, the UNDP Country Office and UNDP-GEF's Regional Coordinating Unit will review the document.

**(b) Quarterly Progress Reports (QPRs)**

24. Short reports outlining main updates in project progress will be provided quarterly to the local UNDP Country Office and the UNDP-GEF regional office by the project team.

**(c) Technical Reports (TRs)**

25. Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

26. Audit Clause. The Government will provide the Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

**1.5 Legal Context**

27. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement (SBAA) between the Government of EGYPT and the United Nations Development Program. The host country-implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.

28. UNDP acts in this Project as Implementing Agency of the Global Environment Facility (GEF), and all rights and privileges pertaining to UNDP shall be extended mutatis mutandis to GEF.

29. The UNDP Resident Representative is authorized to affect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

- a) Revision of, or addition to, any of the annexes to the Project Document;
- b) Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- c) Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and
- d) Inclusion of additional annexes and attachments only as set out here in this Project Document.

## Part 2: Budget

EXPECTED Outcomes	OUTPUTS (and corresponding indicators)	PLANNED BUDGET								
		Resp. Partner	Source of Funds	Budget Code	Budget Description	Year 1 (US\$)	Year 2 (US\$)	Year 3 (US\$)	Total Budget (US\$)	
Egypt's Second National Communication	National Circumstances		GEF	71300	Local consultants	2,000	3,000	3,000	8,000	
	<b><i>Nat.Circum. total</i></b>					<b>2,000</b>	<b>3,000</b>	<b>3,000</b>	<b>8,000</b>	
	GHG inventory			GEF	71300	Contractual services / individuals	15,000	10,000	5,000	30,000
				GEF	71400	Local consultants	10,000	8,000	2,000	20,000
				GEF	71600	Travel	7,000	-	-	7,000
				GEF	74100	Professional Services	10,000	10,000	-	20,000
				GEF	72200	Equipment & furniture	5,000	-	-	5,000
				GEF	72400	Communication and audiovisual equipment	1,000	1,000	1,000	3,000
				GEF	72500	Supply	-	1,000	1,000	2,000
				GEF	74000	Miscellaneous operating expenses	1,000	1,000	1,000	3,000
	<b><i>GHG inventory total</i></b>					<b>49,000</b>	<b>31,000</b>	<b>10,000</b>	<b>90,000</b>	
	GHG abatement			GEF	71200	International consultants	5,000	5,000	2,000	12,000
				GEF	71300	Contractual services / individuals	10,000	10,000	3,000	23,000
				GEF	71400	Local consultants	3,000	7,000	5,000	15,000
				GEF	71600	Travel	7,000	-	-	7,000
				GEF	72200	Equipment & furniture	4,000	1,000	-	5,000
				GEF	72400	Communication and audiovisual equipment	-	1,000	1,000	2,000
				GEF	72500	Supply	-	500	500	1,000
	<b><i>GHG abatement total</i></b>					<b>29,000</b>	<b>24,500</b>	<b>11,500</b>	<b>65,000</b>	
	V&A			GEF	71200	International consultants	5,000	7,000	8,000	20,000
					71300	Contractual services / individuals	11,000	10,000	5,000	26,000
				GEF	71400	Local consultants	15,000	7,000	3,000	25,000
				GEF	71600	Travel	7,000			7,000
				GEF	72200	Equipment & furniture		5,000	-	5,000

		GEF	72400	Communication and audiovisual equipment	1,000	1,000	1,000	3,000
		GEF	72500	Supply	1,000	1,000	1,000	3,000
		GEF	74000	Miscellaneous operating expenses	1,000	1,000	1,000	3,000
<b>V&amp;A total</b>					<b>41,000</b>	<b>32,000</b>	<b>19,000</b>	<b>92,000</b>
		GEF	71400	Local consultants	-	4,000	2,000	6,000
Gaps and constraints		GEF	74000	Miscellaneous operating expenses	3,000	3,000	3,000	9,000
<b>Gaps and constraints total</b>					<b>3,000</b>	<b>7,000</b>	<b>5,000</b>	<b>15,000</b>
		GEF	71400	Local consultants	5,000	5,000	4,000	14,000
Other information		GEF	74000	Miscellaneous operating expenses	2,000	2,000	2,000	6,000
<b>Other information total</b>					<b>7,000</b>	<b>7,000</b>	<b>6,000</b>	<b>20,000</b>
		GEF	71300	Contractual services / individuals	25,000	25,000	25,000	75,000
		GEF	72400	Communication and audiovisual equipment	2,000	2,000	1,000	5,000
		GEF	72500	Supply	2,000	2,000	1,000	5,000
		GEF	74100	Professional Services	5,000	5,000	-	10,000
Project Management		GEF	74000	Miscellaneous operating expenses	2,000	2,000	1,000	5,000
<b>PM total</b>					<b>36,000</b>	<b>36,000</b>	<b>28,000</b>	<b>100,000</b>
Monitoring and Reporting (M&R)		GEF	74100	Professional services	5,000	5,000	5,000	15,000
<b>M &amp; R total</b>					<b>5,000</b>	<b>5,000</b>	<b>5,000</b>	<b>15,000</b>
<b>BUDGET TOTAL</b>					<b>189,000</b>	<b>133,500</b>	<b>82,500</b>	<b>405,000</b>

## Part 3: Appendixes

### Appendix A: Summary report of the self-assessment exercise

#### I. Scope and approach to the stocktaking

30. The *main objective* of the self-assessment exercise performed in accordance with GEF Operational Procedures for the Expedited Financing of National Communications from Non-Annex I Parties is to undertake a highly consultative and participatory process of needs assessment, to identify and validate the critical priorities for UNFCCC implementation in Egypt in general, and SNC project proposal in particular.
31. This exercise is considered as the first but *critical step* in preparing the proposal for the SNC to the UNFCCC. A synthesis report is produced as the main output by serving of dual purpose. It is a *baseline document* for the SNC proposal, as a tool to *identify* and *validate* priorities for further in-depth studies and *new areas* of work to be carried out in the course of the SNC. In addition, it will provide an assessment of *gaps, uncertainties, barriers and lessons learnt* during previous and ongoing activities. This approach helps ensuring that the SNC is build upon previous activities, studies, experiences, and institutional settings. The stocktaking exercise is *focused on all thematic areas* related to National Communication as indicated by 17/CP8.
32. The *approach* applied for the stocktaking exercise is based on the Terms of Reference by requesting a brief summary of activities and results achieved under prior and/or ongoing activities<sup>1</sup> that will ensure that proposal for SNC is build upon them.
33. To facilitate the stocktaking exercise *a stocktaking team* was set up. The Scientific Consultant of the Climate Change unit *led* the stocktaking and served as *facilitator* and *coordinator* of this exercise. The stocktaking team was composed of seven teams. Three *inventory and mitigation* teams (energy and industry, agriculture and waste) and 4 *Vulnerability and Adaptation* teams (coastal zones, agriculture, water resources, public health) were formed, where each was led by a team leader. Stockholders invited were representatives from National Committee for Climate Change, Egyptian CDM Council, SNC team members, representatives from NGOs and concerned ministries. Each team leader was responsible of producing a *separate report* on the respective thematic area. In addition, team leaders held consultations directly with the stockholders when necessary. Seven reports have been submitted to the Scientific Consultant who was responsible for the compilation of final synthesis report<sup>2</sup> of the stocktaking and the SNC project proposal document, their circulation for comments and feedback and their incorporation.
34. The following *main tools* have been used for the stocktaking: (i) *in-desk review* of relevant documents; (ii) *interviews* with stockholders; (iii) consultative *meetings / workshop*. The stocktaking exercise took about 14 weeks and brought together around 50 stockholders from different ministries, public institutions, NGOs, academia, international organizations based in Egypt and private sector. (See matrix of stockholders).
35. Serious discussions and exchange of views of the participants of the workshop that was held on 17 August 2005 in Cairo House yielded the following important comments:
  - i. The implementation of the SNC project should not be delayed anymore; since, much time has been lasted since submission of Egypt's INC on 1999.

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<sup>1</sup> All Prior and ongoing projects for climate change funded by GEF or other organization such as Egypt's INC

<sup>2</sup> Seven draft reports, starting of a zero-draft-order were compiled and circulated.

- ii. The increased Energy consumption in construction and housing sector should be taken into consideration in Energy assessment and GHG inventory.
- iii. The annually increased consumption of fertilizers and emissions from burned rice straw should be accounted for in GHG inventory.
- iv. Transparency and Quality Assurance should be accurately realized; so that, the data and results included in SNC could be easily revised and analyzed. This will allow avoiding shortcomings and discrepancies similar to that prevailed in the INC. Estimations of GHG inventories in INC were mostly based on emission factors that are not adjusted to the local meteorological conditions. Different results could be achieved upon comparing values of sectoral GHG emissions presented in different parts of INC. Also; accurate estimations of GHG emissions are beneficial in CDM investment promotion.
- v. Stocktaking representatives from each concerned ministry should be chosen as a focal point for National Communications, in order to facilitate collection and submission of data.
- vi. Development of a regional Climatic model should be encouraged, in order to attain accurate projected impacts.
- vii. Studies on Vulnerability and Adaptation to Climate Change should cover tourism sector in Egypt's SNC.
- viii. Egypt's SNC should include numerous activities concerning Public Awareness, Education and Training. One chapter will be devoted to highlight these issues. In addition, the project should contribute to enhancing general awareness and knowledge on climate change related issues in Egypt, and to strengthen the dialogue, information exchange and cooperation among most of the national institutions, non-governmental organizations, academia, and private sectors.
- ix. Mitigation of Climatic Changes through activities of: fuel switching to natural gas, improving energy efficiency, and promoting projects of renewable energies...etc, should be encouraged in the National development plans.  
Synergies between UNFCCC and the other international conventions concerned with desertification and biodiversity should be supported through different activities of the SNC.

36. The technical guidance provided by the UNDP-GEF, comments, are taken into consideration. In addition, *User Manual for the Guidelines on the Preparation of NC from non-Annex I Parties* prepared by the UNFCCC Secretariat, the *Guide for Carrying Out Self-Assessment Exercise*, and *Guidance for the preparation of the technical components of project proposals for second national communications* providing very useful guidance and help in conducting the self assessment exercise.

## **II. Summary of main findings of the assessment**

37. The stocktaking team performed an assessment of each thematic area relevant to the National Communication. Experts were grouped into teams and findings of all teams were integrated in the final stocktaking report. The *main focus of assessment* was Egypt's INC performed under the GEF funded project, namely: "*Enabling Activities for the Preparation of Egypt's Second National Communication to the UNFCCC*". In addition, other projects funded either by GEF or other donors relevant to each thematic area were considered when available.

### **II.1 National Circumstances**

#### II.1.1 The baseline

38. The Egyptian national circumstances were thoroughly documented in the INC. Information was provided for (i) Geographic setting; (ii) Climate profile; (iii) Population (iv) Water resources; (iv) Economic overview [gross domestic product, exports, investment, agriculture, industry, trade, energy, transportation] (v) Waste management and (vi) climate change institutional framework.
39. The inventory base year was 1990/1991 and the information presented covered the period 1990-1998. In some instances, comparison between the year 1990 and 1998 was given without presenting any information for years in between. For some sectors, and due to lack of data, information was only provided for the years 1990 and 1996. Energy pricing data was given for the period 1990 to 1998. The main information and data on national circumstances were received through annual reports and data from ministries and public research institutes.
40. Geographic characteristics information was presented in the INC. Information on geographic setting was covered where such type of information has not changed and needs no update in the SNC. Information on climate was also provided in the INC which will need some update in the SNC given the recent extreme weather events. Data were neither provided for land use nor for environmental characteristics. Such data should be provided in the SNC.
41. Population data was provided for the year 1990 and 1998 with some statistics on growth rates and life expectancy. Such information will need to be updated in the SNC. The First National Communication (1999) reported that climate change was expected to have both direct and indirect adverse impacts on human health. Moreover, the First National Communication noted that at least two million people were likely to migrate from the Delta coastal areas due to the inundation and loss of fertile land.
42. The section of national circumstances contained information on water resources as the unique and most important natural resource in Egypt. Mineral resources are another important natural resource that should be covered in SNC.
43. Egypt has witnessed major policy changes in different sectors since 1998. Government policies have moved towards switching the use of heavy fuel and gas oil to natural gas where a drastic change in fuel pricing scheme occurred. The waste management sector is witnessing a shift towards privatization of waste management activities. Many changes occurred in the industrial sector to the extent that the Ministry of Industry has been merged with the Ministry of Foreign Trade. Also, privatization of many publicly owned companies occurred after 1998. In the Agriculture sector, new policies are being implemented.
44. Given these major changes in policies, there is a strong need to update the profiles of most of the sectors that were presented in the INC, especially for the energy, industry, waste and agriculture. Moreover, information on sectors that were not covered such as mineral resources should be provided in the SNC.
45. Despite the efforts and projects that have taken place in Egypt in the field of climate change through the First National Communication, there are still a lot of research gaps and needs that ought to be covered in the Second National Communication.
46. The INC did not include any data on education, which is recommended in the new UNFCCC guidelines. Therefore, such data need to be included in the SNC.
47. For a long time ago, active international programs in Climate Researches such as World Climate Program & World Meteorological Organization Programs devoted to different topics of climatic studies investigations are existing. However, the contribution of the Egyptian Institutions in these international program is still weak, in spite of the large number of research papers that are often published in Local & non-international journals ,in addition to numerous M.Sc. & Ph.D. theses that are accomplished in different fields of Meteorology & Climatology from these institutions.

48. Agriculture is increasingly becoming an energy consuming sector. Drainage, drip irrigation and sprinkles processes are energy consuming activities. Also, energy is consumed through transportation of agricultural products & fertilizers using tractors and other medium and heavy duty vehicles. This scope will be considered in SNC.
49. In new reclaimed areas & often in other areas, agriculture is partially mechanized which is heavily consuming energy. In addition, agrochemicals are manufactured through different processes that consume energy. Precise estimation of this energy should be taken into consideration in SNC.
50. A section on institutional structure to comply with requirements of the convention was provided in the INC. This section will need to be updated to include additional efforts that are being implemented to improve the existing institutional setup.

### II.1.2 Priorities / new areas of work under SNC

51. The new UNFCCC guidelines present the contents of the National Circumstances chapter in the SNC. This chapter shall include information on the following items: (i) *Geographical characteristics*: climate, forests, land use and other environmental characteristics (ii) *Population*: growth rates, distribution, density and other vital statistics, (iii) *Economy*: including energy, transport, industry, mining, tourism, agriculture, fisheries, waste, health and services sector, (iv) *Education*: including scientific and technical research institutions (v) *Specific needs and concerns* arising from the adverse impacts of climate change and (vi) *Institutional arrangements* relevant to the implementation of the UNFCCC and NC preparation process.
52. *Geographic characteristics* information provided in the INC mainly focused on geographic setting and climate information. No data on land use or environmental characteristics were presented. Information on land use and environmental characteristics will be provided in the SNC and update of climate information will also be done, especially temperature and precipitation data, given the recent extreme weather conditions. Such data will be provided for the time horizon 1990-2000. Also updates on other geographic characteristics such as share of land covered by surface water, information on international waters that Egypt shares with other neighbors will be included. Additionally, there is a need to update the water resources profile mainly through adding more details about ground and recycled waters, water requirements of different sectors, water quality, policy and legal frameworks of water management, and the current and future pressures on water resources. Data for mineral resources will also be included in the SNC. The state of the environment including urban air quality, water quality and hot spots will be provided along with institutional framework, legal framework, and public awareness and education on environment.
53. Update of *population data* will focus on providing data for the time horizon 1990-2000 including density and geographic distribution data. Also, health and other relevant vital population statistics will be included in the SNC.
54. The update of *economy and sector profile* data will comprise the major update in the national circumstances chapter of the SNC. Update of information of the energy sector will include the recently developed strategies such as the National Energy Efficiency Strategy, National Strategy Plan for expanding the use of Natural Gas in the Commercial and Industrial Sectors, Master plan for expanding the use of CNG in Gasoline Vehicles. The recent privatization strategy in the industrial sector will also reflect on information that will be updated for the industry sector. Agriculture profile data will be updated and strengthened through updating agriculture sector dynamics such as driving forces, risks, pressures, current problems, and socioeconomics. Waste sector data will also be updated to include recent privatization activities that have been going on since 1998 which obviously have their impact on data of the sector.

55. The information on institutional arrangements relevant to the implementation of the UNFCCC and preparation of NC would provide updated information on following: (i) National Focal Point; (ii) status of Egypt under the UNFCCC and Kyoto Protocol and state their implementation; (iii) status of the national committee on climate change and update of its activities (iv) distribution of responsibilities among Ministries and national institutions, NGOs etc; (v) stockholders involved in the process; (v) institutional framework of climate change unit at the Egyptian Environmental Affairs Agency including GHG inventory and Clean development Mechanism (CDM) teams.

## **II.2 GHG inventory**

### II.2.1 The baseline

56. The lead agency responsible for the GHG inventory preparation is the Climate Change Unit at the Egyptian Environmental Affairs Agency. The Unit was established in October 1997 and is solely responsible for climate change issues in Egypt. The unit represents the focal point of the UNFCCC.
57. The GHGs inventory provided in the INC covered three of the *direct GHGs*, namely: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Emissions of HFCs, PFCs and SF<sub>6</sub> were not covered in the INC. Also, indirect GHGs such as CO, NO<sub>x</sub>, NMVOCs were not covered. Although most source categories were covered in the INC, emissions from some source categories were not included, mainly due to lack of data. For example, CH<sub>4</sub> emissions from industrial wastewater were not estimated as well as N<sub>2</sub>O and CO<sub>2</sub> emissions from any of the waste sector source categories. The SNC will attempt to cover all source categories and all GHGs and indirect GHGs.
58. The prepared inventory was only done for the *base year* 1990. No estimates were done for successive years. The SNC shall cover the time series 1990-2000.
59. Estimation of greenhouse gases relied on the use of IPCC 1996 guidelines using *tier 1 methodologies* for most source categories. For example, emissions for all source categories in the waste sector were estimated using Tier 1 methodologies employing IPCC default factors which may not reflect country specific situation. IPCC good practice guidance issued in the year 2000 was not used since the first national communication was prepared in 1998/1999. Higher tier methods as well as the use of Good Practice Guidance will be considered in the development of the inventory in the SNC preparation.
60. Most of the used methodologies, assumptions and data were not *transparently* documented in estimating emissions from many source categories; this raises an issue of concern. For example, activity and emission factor data used to estimate CH<sub>4</sub> emissions from solid waste disposal on land were not well documented. Also, methodologies used in estimating emissions from the transportation sector were poorly documented. Transparency will be considered in the preparation of the SNC to allow for reconstruction of the inventory.
61. Although inventory data are available by source category, *Key source categories* were not identified for neither level nor trend analyses in the INC. This analysis should be done employing IPCC Good Practice Guidance to prioritize areas of work and research in the course of development of the SNC. Such analysis will lead to improved quality as more confidence in inventory estimates.

In estimating emissions from the energy sector, no comparison was given for estimates using *the reference and sectoral approaches*. Emissions from *international bunkers* were reported separately as per recommendations of the IPCC 1996 guidelines. *Global warming potentials* of the Second Assessment report were used in converting emissions of CH<sub>4</sub> and N<sub>2</sub>O to carbon dioxide equivalent emissions. In estimating emissions from the industry sector, generic values were introduced. The estimations did not consider the whole sector. Figures were introduced without justifications.

62. All *activity data* concerning each sector were national. For the energy sector, *activity data* were taken from aggregate data of sectors as briefed in the annual reports of the Egyptian General Petroleum Corporation (EGPC), the Egyptian Electricity Authority (EEA), and the Organization for Energy Planning (OEP). Activity data for the industry sector were obtained from the Ministry of Industry and some Holding Companies. Other *data providers/sources* have been the Ministry of State for Environmental Affairs (MSEA), Ministry of Transport (MTR), Ministry of Economy, National Research Center. As for *emission factors*, in most of the cases they have represented default factors provided by IPCC 1996 Revised Guidelines. In many cases, emission factors used in estimates do not reflect Egyptian situation.
63. The major technical *constraints* that have faced the GHG inventory process was related to the *activity data gaps* and use of IPCC default *emission factors* that do not reflect the country situation.
64. Inventory *sectoral tables and IPCC worksheets* were used in preparing the inventory presented in the INC. This is in conformance with the UNFCCC guidelines for SNC preparation. The modified IPCC tables and worksheets will be used in the SNC.
65. No *uncertainty analyses* were conducted for the inventory presented in the INC. According to the UNFCCC guidelines, parties are encouraged to conduct uncertainty estimates as given in the IPCC Good Practice Guidance. At least a tier 1 uncertainty analysis will be conducted in the SNC. Also, no *Quality control / Quality Assurance* activities were done in the course of preparing the inventory presented in the INC. A QA/QC plan will be developed in the SNC.

#### II.2.2 Priorities / new areas of work under SNC

66. All sources and sinks as well as all gases as mandated by 17/CP8 will be covered in the SNC. Therefore it will consider three direct GHGs:  $CO_2$ ,  $CH_4$  and  $N_2O$  and other indirect GHGs such as:  $CO$ ,  $NO_x$ ,  $SO_x$  and  $NM VOC$ . In addition, estimates of  $HFCs$ ,  $PFCs$  and  $SF_6$ , which were not reported under the Egypt's INC, will be provided in the SNC. Emissions released from *bunker fuels* will be estimated and reported separately as instructed by the guidelines. Also, the *reference approach* will be used to estimate emissions from the energy sector and compared to the sectoral approach.
67. Estimates for Egypt's second national GHG inventory shall be made for the *base year 2000*. Recalculations for the year 1990 will be made as well. Given the variability of activity data after '90s the team has agreed to develop *time series for a 10-year time frame (1990-2000)* in order to provide a clear view of the emission trends. This will also create a clear background for the abatement analysis. A special attention will be given to the key source categories and a sensitivity analysis is needed to be done in order to see how / whether the key sources have changed. Therefore priority will be given to the key source categories (see appendix E).
68. Where appropriate, the SNC will attempt to use tier 2 or tier 3 methodologies to replace tier 1 methodologies that were mostly used in the INC. More data will be collected and studies/surveys to improve the estimates of activity and emission data will be conducted. Moreover, IPCC Good Practice Guidance will be utilized in deciding on which tier to be used. The use of higher tier methodologies will improve the GHGs inventory estimates. Recalculations will be done for 1990 inventory based on higher tier methodologies and refined activity and emission factor data.
69. *Transparency* in documenting the GHGs inventory will be considered in the SNC since this was a major drawback in the INC. Assumptions, data sources, description of used methodologies will be appropriately done to allow for reconstruction of the inventory.
70. Where appropriate, country specific *emission factors* will be used. Studies / surveys already conducted since 1998 will be compiled and country specific emission factors will be estimated where appropriate. For source categories where the use of country specific emission factors would not be possible, default

factors provided by IPCC 1996 Revised Guidelines will be used. In addition, Emission Factor Database will be examined to see if appropriate factors relevant to the local Egyptian circumstances are provided.

71. New surveys / data collection efforts will be done in the course of preparing the GHGs inventory for the SNC. These surveys / data collection activities will attempt to cover gaps identified for *activity data* in the INC to be able to refine estimates of emissions.
72. Estimates of the *key sources, sensitivity analysis* and *uncertainty analysis* will be provided. The second GHGs inventory will report on estimates of aggregated GHG emissions and removals expressed in CO<sub>2</sub> equivalent. In addition, implied emission factors such as *CO<sub>2</sub>/GDP* and *CO<sub>2</sub>/Capita* would be estimated mainly for comparability purposes. Modified *sectoral tables and IPCC worksheets* will be used in the SNC.
73. *Quality Assurance/Quality Control (QA/QC)* plan will be formulated and used in preparing the inventory of the SNC. Also, a system for archiving and continuous management of the inventory will be proposed and implemented.

## II.3 GHG abatement analysis

### II.3.1 The baseline

74. Although projects that are being implemented in Egypt which have a direct impact on mitigation of GHG emissions were presented in the vulnerability and adaptation section of the INC, only some quantitative estimates for the effect of these projects on GHGs reduction were provided.
75. A comprehensive presentation of abatement analyses that were conducted in Egypt was provided in the INC. Quantitative analyses were only conducted for the energy sector. Among the presented analyses was the UNEP/VTT/EEAA study which evaluated the cost of abatement of two scenarios to reduce CO<sub>2</sub> emissions by 25% and 50% in the time horizon of 1990-2020. Fifty seven abatement measures were selected to achieve the targeted reductions. Another abatement analysis was the Stand Alone Technology Assessment Reports of the SNAP (Support for National Action Plan) study which evaluated the cost effectiveness and socioeconomic impact of 7 energy efficiency technologies that are used in Egypt. Following the technology assessment study, a study titled “Assessment of scenario Development for the Energy Sector in Egypt was conducted which evaluated future potential reduction in the level of CO<sub>2</sub> emissions from energy-related activities until 2017. The study evaluated 3 scenarios for different technology categories which included: (i) fuel switching, (ii) use of renewable energy in electricity production and (iii) energy efficiency scenario.
76. Qualitative abatement analysis was provided for the *transport, agriculture, and waste* sectors. The abatement scenarios for the agriculture sector introduced qualitative comparisons of emissions in the baseline scenario (reference scenario) with the changes of emissions introduced by various abatement options being evaluated. For the waste sector, no specific abatement technologies were evaluated but rather generic recommendations were provided for solid waste disposal and wastewater handling. One of the good recommendations was to establish an industrial map of Egypt to be able to identify possible technology options / abatement measures. No abatement analyses were conducted for the *Industrial processes and solvents* sectors.
77. Given that the baseline GHG emissions scenario shows that the significant share of CO<sub>2</sub> emissions [88%] are released from the energy sector, the team has decided to focus on such sector in detail, i.e. a thorough *quantitative* analysis should be conducted in the SNC. The team also suggested to include a quantitative analysis for the *industry, agriculture, and waste* sectors.

78. No barriers to implementation of the analyzed abatement measures in the INC were identified. Also, no information on programs and measures that are being planned which helps in the abatement of GHGs was provided in the INC.
79. Although their presence are evident, no *Gaps and uncertainties* to the abatement analysis were identified in the INC. Attempts to reduce data gaps and level of uncertainty under the GHG inventory in the SNC will in turn provide more accurate abatement analysis, i.e. more realistic predictions.

### II.3.2 Priorities / new areas of work under SNC

80. Steps taken or envisaged for formulating, implementing, publishing and regularly updating national and, where appropriate, regional programs containing measures to mitigate emissions will be provided in the SNC as per the recommendations of the UNFCCC guidelines. Projects that are being implemented in Egypt which have a direct impact on mitigating GHGs emissions will be assessed and a quantitative estimate for reductions will be provided in the SNC.
81. The GHG inventory base year 2000 will serve as the starting point of the GHG analysis. The GHG abatement analysis will go up to 2025. There is also a need to update and revise all *details* and *assumptions* made in order to have better and more improved GHG inventory due to data improvement, better inputs from more comprehensive national economic development parameters, more accurate assumptions for economic and demographic parameters.
82. *Models* such as Long Range Energy Alternatives Planning (LEAP), Market Allocation Macro-Economic Model (MARKAL-MACRO), Energy and Power Evaluation Program (ENPEP) to conduct abatement analysis for the *energy sector* will be investigated and the best model where needed data is available will be selected. Training for members of the team to use this model will also be explored since little national capacity exists in the use of such models.
83. The feasibility of using the STAIR (Services, Transport, Agriculture, Industry and Residential energy) model to conduct abatement analysis for the *industry* and transport sectors will be explored in the course of the SNC. Training for members of the team to use this model will also be explored since little national capacity exists in the use of such models. Since no model is recommended to conduct abatement analysis for the *waste sector*, a spread sheet model will be developed to conduct the abatement analysis for this sector. Decision Support System for Agro technology Transfer (DSSAT) will be used to conduct abatement analysis for the *agriculture* sector.
84. As recommended in the first national communication, the existence of an industrial map for Egypt is crucial for the identification of abatement measures / technology options. Therefore, in the course of the SNC, a *geographic information system* (GIS) for major GHGs sources will be developed. A GIS system has already been developed for landfills and open dump sites in Egypt through one of the projects funded by Industry Canada. This developed system will be enhanced and expanded to cover other sources. All available data on GHGs sources will be linked to the geographic location of the source which will help evaluate possible mitigation / technology options that can be applied to specific geographic areas.
85. The *abatement analysis* will focus on the identification of mitigation options relating to the most important future sources and sinks sectors. In addition to mitigation options identified in the INC, options identified in the *Egypt National CDM Strategy* will be considered as well. Screening of mitigation options and assessment of reduction potential and cost of mitigation will be included in the analysis. Integration of GHG reductions and costs across measures and sectors, through the construction of GHG mitigation marginal cost curves will be done as well. Selection of abatement options will be done through a multi criteria analysis. For that purpose criteria will be set and a selection process will be done based on scores according to specific weights given to each criterion. These weights will be decided upon through consultations with different stockholders.

86. The list of abatement options proposed for the abatement scenario for each sector will be reviewed and updated in the light of new developments and needs. Key sources identified and updated under the GHG inventory exercise will be considered while making the selection of technology options. Quantitative estimates for emission reduction will be measured against the baseline scenario. To the extent possible, the economics and socioeconomics of the options will be considered at local scale (scale of governorates and province)
87. After selecting the abatement technologies that will be recommended from the abatement analysis that will be conducted in the course of preparation of the SNC, *barriers* will be assessed along with the *policy needs* and actions. As a result of the barrier analysis, short and long term mitigation options will be recommended.
88. *Planned sector specific programs* for mitigating GHGs will be investigated and reported in the SNC. Costs of implementation, a description of the mitigation potential, and environmental and social benefits will be reported as well. Moreover, a description of the constraints to implementation of these programs will be provided.

## **II.4 Vulnerability and adaptation**

### II.4.1 The baseline

89. The assessment of Egypt's climate vulnerability and adaptation options has not been carried out under specific projects. Some studies were modest and covered the Egypt's coastal area and crop production. Some of these assessments were performed under IPCC guidelines of 1994, i.e.: study of the expected climate changes and their likely impact on the relevant sectors. Another assessment of vulnerability and adaptation has followed. One of the main activities was carried out under Egypt's INC project. This study focused on the assessment of expected climate impacts on agriculture, coastal zones, aquacultures and fisheries, water resources, human habitat, settlements and human health.
90. The overall work performed under Egypt's INC to assess the vulnerabilities has consisted of:
  - (i) Descriptive analysis of vulnerability to the projected climatic variability and trends
  - (ii) Analysis of adaptation measures in the different sectors,
  - (iii) Identification of research gaps in the science of Climate, remote sensing sector and Meteorological sector.
  - (iv) Needs to overcome the identified gaps.
  - (v) Projections of socio-economic situation affected by climate change.
91. No specified climatologic baseline has been considered during Egypt's INC. However, separate trends were estimated on the basis of data provided by the Egyptian Meteorological Authority in 1998 for temperature and rainfall. No selected period for baseline to study the influence of climate on relevant sectors nor time horizons were considered in the INC studies.
92. The overall work performed under Egyptian's INC to assess the agricultural vulnerability consisted of: evaluation of climate variability and trends during baseline period, projection of some main crops (wheat, maize, cotton) situation affected by climate change, and a suggestions of adaptation options (adapted crops, water management, and land management).
93. A climatologic baseline has been used to study the influence of climate on the relevant sectors. Some projections were found for year 2050.

94. The assessment of vulnerabilities and adaptation options was carried out in accordance with the IPCC guidelines (IPCC, 1994).
95. The assessment process was sector-specific and consisted of review the evaluation for adaptation measures for the following sectors: (i) Agriculture, (ii) Coastal zone management, (iii) Aquacultures and fisheries, (iv) Water resources, (v) Human habitat and settlements, (vi) Human health.
96. Most of the efforts on the expected impacts of climate change in INC were devoted to the coastal vulnerabilities which have been assessed as the most vulnerable area followed by agricultural sector and water resources.
97. Vulnerabilities of tourism to climatic changes and the expected adaptation measures were not included in Egypt's INC.
98. The scenarios of likely climate change for EGYPT has not been prepared in INC. The need to use socio-economic scenarios or integrated system models are highly stressed. The analytical methods used in Climate Impact Assessment (CIA) have not been mentioned in the INC.
99. All climatological data were received from the Egyptian Metrological Authority. Data regarding relevant sectors were received from other relevant institutions/ministries like Ministry of Agriculture & Land Reclamation (MALR) and Ministry of Water Resources. Different data bases, surveys and studies have been prepared by National Organizations and Universities.
100. Lack of sufficient data due to lack of systematic monitoring process was a major constraint that generated limitation to the study of vulnerability. The team has been unable to develop baseline scenarios for sectors like agriculture, tourism, and health.
101. Lack of explicit guidelines from UNFCCC for vulnerability and adaptations has made the process rather difficult. Other methodological constraints like lack of methodology for simulation of extreme weather events and lack of models on cost/benefit analysis has generated limitations to the study.

#### II.4.2 Priorities / new areas of work under SNC

102. In vulnerabilities and adaptation assessment, projections of socio-economic situation affected by climate change should be taken into consideration.
103. Agricultural adaptation options are developed by taking into account two main objectives identified, as follows: (i) promotion of sustainable development, and (ii) the reduction of vulnerability (IPCC 1994).
104. Rebuilding and maintaining of public health infrastructure is most important, cost-effective and urgently needed for adaptation strategy. Adaptive strategies intended to protect public health will be needed whether or not actions are taken to mitigate climate change. Also, building capacity is an essential preparatory step. Adapting to climate change will require more than financial resources, technology, and public health infrastructure.
105. The assessment will integrate also other sections in agricultural sectors like water requirements, irrigation systems, pests and diseases, etc.
106. The emphasis will be put on the current conditions i.e. current climate risk and vulnerability and on this basis the future vulnerability will be predicted. This part of the assessment also includes an assessment of the scope and effectiveness of adaptation measures that may have been implemented. Three baselines will be developed for the selected area: (i) climate baseline; (ii) environmental baseline and (iii) socio-economic baseline.

107. Designing of an Adaptation Strategy Paper based on Adaptation Policy Framework (APF) for the selected areas will be the main outcome of the vulnerability and adaptation exercise under the SNC. This will facilitate the process of mainstreaming the climate vulnerability and adaptation response to the national planning and policy.

108. It has been evident from the team discussions that focus of the assessment should be carried out under the SNC in areas with subset of vulnerabilities, where there is both high vulnerability and a likelihood of significant impacts of climate change. The selected areas along with the sectors under analysis will comprise a compound system that will be under the focus of analysis. Three specific sectors were analyzed under the stocktaking exercise. The team has agreed that the assessment of vulnerability will be sector –specific and will consider related sectors, such as: (i) Agriculture, (ii) Coastal zone management, (iii) Aquacultures and fisheries, (iv) Water resources, (v) Human habitat and settlements, (vi) Human health; (vii) Tourism.(viii) Energy; (ix) Transportation. A special attention will be put to water resources and their respective impact on crop production especially in the newly reclaimed areas.

109. A set of selection criteria of equal weight was developed and agreed through broad consultations with stockholders. These were:

- (i) Scale of vulnerability;
- (ii) Relevance to national development priorities;
- (iii) Development benefits;
- (iv) Data availability.

Each member of the evaluation team independently allocated one of the following scores: (i) High (+++); Medium (++); Low (+).

110. The selected sectors are wide spread, from east to west of EGYPT putting together an interesting topographic diversity such as Nile Delta, coastal areas and Upper Egypt.

111. Current vulnerability and climate impact to sectors will be assessed through the use of some indicators: For the climate system the indicators will be: Temperature (seasonal), Precipitation (seasonal), Wind, Cloudiness and Sunshine duration. The average change in mean runoff will be selected as a main indicator for water resources. For energy sector the main indicators would be of energy demand and supply. Plant production, irrigation systems, and crop production would be used as indicators for agriculture/livestock. Coastal tourism under the selected sectors will be assessed in terms of the impact of the sea level rise and the rise of temperatures. Settlements will be assessed in terms of impact of droughts and hot waves into inhabitant's wellbeing.

112. Among the important work that should be performed is a development of climate change scenario based on the analysis of the climatological data of different terms. Projection of Environmental changes due to impact of Climate Change on the Coastal areas & water resources are another scope of the important work that should be implemented. Further work should be devoted to investigate the Socio-economic situation in vulnerable areas.

113. Quantitative assessment to build a geographic information system using satellite imagery of the region in combination with real measurements of Sea Level Rise at different sites of Egypt's Northern Coastal Zone should be the scope of an important program:

- (i) Preparation of coastal data base and study the impacts of salt water intrusion and vulnerability of coastal areas to sea level rise,
- (ii) Mapping and demarcating the 1 or 2 meter contour from the sea to study sea level rise impacts,
- (iii) Undertake investigations on the impacts of sea level rise and temperature rise on coral reef systems around the Red sea coastal belt,

- (iv) Assessment of the extent of land that will be affected by sea level rise,
- (v) Assessment of the impact of climate change on river flow regimes,
- (vi) Prepare a groundwater extraction regulation policy,
- (vii) Introduce monitoring systems for groundwater intrusion & water quality assessment in vulnerable areas.

## **II.5 Constraints and gaps, and related financial, technical and capacity needs**

### II.5.1 The baseline

- 114. Egypt's INC contained a separate chapter that addressed research gaps and needs. Needed research related to the science of climate, impacts of climate change as well as policy related research. Problems, gaps, constraints that have faced the INC preparation exercise have not been discussed. Constraints and gaps should be assessed in terms of institutional, technical, methodological and resource availability.
- 115. Egypt's INC lacked comprehensive studies with detailed estimations and correlation between climate change and human health. Also, no separate studies were carried out to examine the direct and indirect health impacts of migrations, due to inundation of the low lying areas of the Delta.
- 116. Gaps and constraints associated with the implementation of activities, measures and programs envisaged under the Convention were not addressed in the INC.

### II.5.1 Priorities / new areas of work under SNC

- 117. Although research gaps and needs were discussed in the INC, it would be necessary to include gaps and constraints during the preparation of the SNC; this will help improving subsequent submissions of the NC. After the completion of technical components of the SNC, an in-depth analysis of all types of constraints and gaps (methodological, technical, and financial) will be done.
- 118. In addition, gaps and constraints while implementing the UNFCCC will be reported. The information will include constraints and gaps associated with the complication and improvement of NC on continuous basis. Also needs, gaps and constrains related to the technology transfer will be provided. This section will contain information on financial resources and technical support provided by GEF and other multilateral/bilateral contributions. Gaps and constraints associated with the implementation of activities, measures and programs envisaged under the UNFCCC will also be addressed.
- 119. In the SNC, a set of proposed projects that aim at reducing emissions from sources will be provided. Specific technologies to be used, materials/equipment required, techniques or practices that would be needed to implement such projects, an estimate of incremental costs, and estimated reductions in emissions and consequent benefits will be provided.
- 120. Adaptation projects (pilot or demonstration) that are proposed for future implementation will be included. Specific barriers to the implementation of these projects and needed financial support to implement these projects will also be provided in the SNC.

## **II.6 Other information relevant to the National Communication process**

- 121. Regarding other information relevant to NC, Egypt's INC contained a separate chapter for Public Awareness, Education and Training. This chapter highlights these issues as relevant and crosscutting ones to the NC preparation exercise.

122. A special attention under this section will be put on the issue of, training, education, public awareness capacity building and information and, the steps that Egypt has taken to implement Article 6 of the UNFCCC and respective part of Buenos Aires Plan of Action.  
The information on public awareness, training and education will consist on the institutional
- (i) framework for implementation of Article 6 of the UNFCCC;
  - (ii) level of awareness;
  - (iii) implemented or/and ongoing activities for education, training, public awareness
  - (iv) public access to information;
  - (v) sub-regional, regional, and international cooperation to promote education, training, and public awareness.
123. This section will provide information on the following capacity building activities:
- (i) Status of the capacities built and developed;
  - (ii) needs and options on capacity building and development;
  - (iii) dissemination and sharing of information on capacity building activities.
123. Information is an essential part. Along with capacity building, public awareness and training remain crosscutting issues. This section will include information on:
- (i) efforts made to promote information sharing;
  - (ii) participation in and contribution to information networks;
  - (iii) access to and use of information technologies for information exchange.

## **II.7 Priorities / new areas of work under SNC**

124. This section will provide information on steps that have been taken to mainstreaming climate change into national development agenda, i.e., steps to integrate climate change into socio-economic and environmental policies. Activities related to technology transfer as indicated under Article 4/CP7 will be reported under this section as well, for example how Egypt is addressing activities related to the transfer of, access to environmentally sound technologies and know-how.
125. This section will provide information on climate change research and systematic observation systems. The above information will consist of the status of national programs for research and systematic observation, type of observation (meteorological, hydrological, oceanography), level of participation into global research systems, needs and priorities for systematic observations.
126. Information on Egypt's participation in the regional / sub-regional or global research networks and programs will be provided.
127. Regarding assessments of Climate Change impacts on health, the following scopes would be considered:
- i- Establishing baseline relationships between weather and health,
  - ii- Seeking evidence of early effects of climate change,
  - iii- Scenario-based predictive models of climate change health impacts,
  - iv- Evaluating adaptation options,
  - v- Estimating the co-incident health benefits and costs of mitigation and adaptation.

## **II.8 Lessons learnt and good practices**

128. In this section, all teams who participated in the development of the SNC will provide experiences earned. Previous work and achievements in the field of climate change will be mentioned. Also, interaction between teams, international experts and UNFCCC will be mentioned.

129. The preparation of the NC was a *learning-by-doing* exercise that served for building and developing national capacities to compile NC to the COP of the UNFCCC.
130. *Technical support* provided by UNDP-GEF NCSP through thematic workshop, help desk, newsletters and peer review of all components of the NC was critical for the quality improvement of the National Communication.

## Appendix B: Technical components of the project proposal

### 1. Background/Context

131. The United Nations Framework Convention on Climate Change (UNFCCC) was signed in June of 1992 at the Rio "Earth Summit". The ultimate objective of the Convention is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate. By becoming Parties to the Convention, both developed and developing countries accepted a number of commitments which include, *inter alia*, those to:
  - Develop, periodically update, publish and make available to the Conference of the Parties (COP) of the UNFCCC national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol;
  - Formulate, implement, publish and regularly update national and, where appropriate, regional programs containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change; and
  - Communicate to the COP information related to implementation of the Convention, in accordance with Article 12.
132. Since 1982, the establishment of the Egyptian Environmental Affairs Agency (EEAA) signified the attention directed to the issue of environmental protection by the Government of Egypt. EEAA was established as the national authority responsible for promoting and coordinating all efforts related to environmental protection. Furthermore, within the context of setting up the **Climate Change institutional structure** at the national level to comply with the United Nations Framework Convention on Climate Change (UNFCCC), an inter-ministerial committee was established in October 1997. The national committee was headed by the Chief Executive Officer of EEAA and the members represent a wide range of governmental and non-governmental stockholders. The committee aims at coordinating the national participation of Egypt in the Framework Convention on Climate Change, developing an overall policy for dealing with the issue of climate change, reviewing the National Action Plan for Climate Change and following up on the implementation of the Framework Convention on Climate Change.
133. Over the past few years, significant progress was made relating to national capacity building and institutional development in the field of climate change. Several organizations were involved at the national level in climate change related activities. These include: environmental organizations, energy related organizations, research centers, universities, governmental organizations and non-governmental organizations. These multi-layer climate change institutional arrangements will play a leading role in integrating climate change issues in the national agendas.
134. Since December 1994, Egypt has been a Party to the UNFCCC, having the status of a non-Annex 1 country. Egypt signed the Kyoto Protocol on 15 March 1999 and has recently ratified it on 12 January 2005.
135. As a non-Annex 1 country, Egypt does not have commitments to reduce certain amounts of GHG emissions as Annex I countries have. The SNAP aimed at the preparation of a national action plan for climate change in Egypt. An inventory for GHGs from different sectors was prepared through the SNAP. The SNAP also aimed at setting policies for abatement of GHGs.
136. The preparation of the Egypt's First National Communication (INC) was the first accomplishment of the Government of Egypt to the COP of the UNFCCC. The INC was officially submitted to the UNFCCC secretariat in August 1999.
137. The government of Egypt has always been very active in the climate change negotiations and an official delegation, often with high level representatives, attends the annual COP meetings.
138. The National circumstances in Egypt as summarized in the INC are given in the following table:

**Table 1.2: National Circumstances**

Criteria	90/91	97/98
Population (million)	55	65
Area (square kilometers)	1.001.450	1.001.450
GDP (million US\$)	35.607*	74.106
GDP-real growth rate “%”	3.7	5.3
GDP Per Capita “US\$”	638.81*	1,095.73
Employment in Formal Sector(million)	13.376	16.344
Share of Industry in GDP“%”	16.57	18.50
Share of Services in GDP“%”	18.0	18.0
Land Area Used for Agricultural Purposes” sq. km”	3 %	4%
Urban Population as Percentage of Total Population	44% <sup>1</sup> 12 million	43% <sup>2</sup> 16 million
Live Stock Population (thousands )		
Cattle	2993	2737
Buffalo	2792	2302
Sheep	4147	7346
Goats	4446	3570
Camels & limas	197	454
Swine	102	39
Poultry	42	83,099**
Forest Area ( sq Km)	0%	0%
Population in Absolute poverty	N.A	N.A
Life Expectancy at Birth Years		
Total	61.75 years	64.35
Females	63.8 years	65.6 years
Males	59.8 years	63.1 years

\*1992

| 1986

?? 1999

\*\*1995 ?

Sources: Ministry of Finance, Ministry of Planning, Central Bank of Egypt and CAPMAS

139. As for **Greenhouse Gases inventory**, it is estimated that the total GHG emissions of Egypt in 1990 were equal to 116,608 Gg of CO<sub>2</sub> equivalent using the 1995 Global Warming Potential (GWP) of the IPCC, while the net emissions were equal to 106,708 Gg of CO<sub>2</sub> equivalent. The energy sector is the main source of GHG emissions because Egypt is 92% dependent on fossil fuels (oil and natural gas). The agricultural sector is the second largest GHG source, mainly from enteric fermentation and rice cultivation; followed by industrial emissions of CO<sub>2</sub>, mainly from the steel and cement industries. Methane is the main GHG produced from the waste management sector as a result of anaerobic bacterial decomposition of organic matter in landfills and open dumps. As in most countries, CO<sub>2</sub> is the main GHG emitted in Egypt, while methane is the second major GHG. (See table 1)

**Table 1 Greenhouse Gas Emissions 1990/91**

GHG Source & Sink Categories	CO <sub>2</sub> Emissions	CO <sub>2</sub> Removals	CH <sub>4</sub>	N <sub>2</sub> O
<b>Total National Emissions &amp; Removals</b>	84.459	9.900	1.029	34
<b>1. All Energy (Fuel Combustion + Fugitive)</b>	74.682		206	12
a. Fuel Combustion	74.682		58	11.66
1. Energy & Transformation industries	25.120		0.08	0.97
2. Industry (ISIC)	21.120		0.05	0.86
3. Transport	18.189		10.63	8.87
4. Small Combustion	10.029		0.43	0.71
5. Other				
6. Traditional Biomass Burned for Energy	9.543		74	251.
b. Fugitive Emissions from Fuels			147.56	
1. Solid Fuels				
2. Oil & Natural Gas			147.59	
<b>2. Industrial Processes</b>	9.777		9	1
<b>3. Solvent &amp; Other Product Use</b>				
<b>4. Agriculture</b>			543	21
a. Enteric Fermentation			323.37	
b. Manure Management			23.23	
c. Rice Cultivation			189.9	
d. Agriculture Soils				21.1
e. Prescribed Burning of Savanas				
f. Field Burning of Agric. Residues			6.8	0.2
g. Other				
<b>5. Land use change &amp; forestry</b>		9.900		
a. Change in forest & other woody Biomass stocks		9.900		
b. forest & grassland conversion				
c. Abandonment				
d. Other				
<b>6. Waste</b>			271	
a. Solid waste disposal on land			264.27	
b. Wastewater treatment			6.59	
c. Waste incineration				
d. Other waste				
<b>7. Other</b>				

Source: Egypt National Greenhouse Gases Inventory 1990/91.

140. Egypt's large and dense population (in the Nile valley & Delta) makes the country extremely **vulnerable** to climate change. The population of Egypt on January 1996 was estimated at approximately 63 million, Egypt does not produce enough food to feed its current population. Its water resources are rather limited. Moreover, its Nile delta is seriously threatened by sea level rise.
141. Petroleum, natural gas & hydropower are the major energy sources for Egypt. Recently, renewable energies start to contribute to Egypt's energy market & the first plant using integrated solar thermal, 150 MW, was established.
142. Two major programs has been launched by EEAA & executed by the Organization of Energy Conservation & Planning (OECF). The Support for National Action Plan (SNAP) sponsored by

USCSP & the "Building Capacity for Egypt to Respond to UNFCCC" sponsored by UNDP-GEF. The objectives & approaches of these 2 programs are:

- i. The preparation of National Climate Change report,
  - ii. In depth evaluation of priority mitigation and adaptation technologies/measures,
  - iii. Assessment of additional resources & opportunities to promote technology,
  - iv. Strengthening Egypt's capacity to comply with the requirements of UNFCCC,
  - v. Institutionalization of the national communication to comply with UNFCCC,
  - vi. Approaches: Training of experts, setting up of seminars, workshops, studies related to climate change & establishing close links with regional UNEP-GEF projects.
143. In 1993, Egypt participated in the **UNEP Greenhouse Gas Abatement Costing Studies**. National case studies covering the sources, abatement technologies, and costs of GHG, in both developed and developing countries were the first step in the right direction. They would provide detailed information on: the GHG emissions and their sources in different countries, the costs of decreasing these emissions and they will also form the basis of integrated regional case studies. The Egyptian case study on the costs of abatement of GHGs is an example of positive international cooperation. First, it brought investigators from the North and the South together in close team work. Some expertise, tools and funds came from the North and a lot of data and experience came from the South. Second, the project included several multinational multi-disciplinary workshops which created informal forums and opportunities for brain storming among experts of different backgrounds. Third, the coordination of the project and the studies was entrusted to UNEP collaborating center whose team has worked very effectively in putting the broad lines of the methodology and the details of the approach of the studies.
144. Starting 1995, two major programs were launched by the Egyptian Environmental Affairs Agency, EEAA. The Support for National Action Plan – SNAP, a USCSP project, and the Building Capacity for Egypt Project, funded by GEF, whose aim was to respond to the United Nations Framework Convention on Climate Change, UNFCCC. Under the two programs sixteen studies were executed to fill the identified gaps. The studies covered the fields of GHG emissions inventory, mitigation and adaptation technology assessment, adaptation options, abatement costs, and other areas. The titles of the studies that were carried out within the projects are:
- i. **Vulnerability Assessment of Fresh Water Resources in Egypt to Climate Change:** The study extensively analyzed and quantified the amount of freshwater used in Egypt, and its different sources either surface or underground. It also further analyzed the water demand for irrigation, municipal and domestic and industrial sectors. Based on such analysis, the impact of climate change was assessed for every source and its effect on both demand and supply.
  - ii. **Review of the Previous Framework of Egypt's Action Plan for Dealing with Climate Change:** The Framework of Egypt's Action Plan for Dealing with Climate Change was a first attempt at defining the structure of the framework national action plan. The main elements covered were monitoring climate change, actions for reducing GHG emissions, vulnerability and adaptation to climate change, and supporting activities.
  - iii. **Assessment of Strategy and Policy Measures for Adaptation to Climate Change in Egyptian Agriculture:** The purpose of the study was to investigate how to mitigate the potential effects of climate change on Egyptian agriculture through analysis and evaluation of adaptation strategies and determining the effective ones to reduce the adverse impacts and improve the positive impacts of the expected climate change on the agricultural sector. The potential impact of climate change on wheat, maize and cotton production in Egypt was evaluated by simulating crop production under different climatic scenarios in case of wheat and maize, and by analyzing sensitivity to temperature in case of cotton in the three main agricultural regions of Egypt.

- iv. **Adaptation Studies for Sea Level Rise:** This study carried out a detailed assessment of the vulnerability and expected socioeconomic losses over the Nile Delta Coast due to the impact of sea level rise. Impacts of SLR on the governorates of Alexandria and Port Said in particular were evaluated quantitatively, and results were summarized and discussed. Results indicate that there are very limited possibilities for vulnerable stakeholders to change jobs; the cost is the main barrier to implementation; the majority of stakeholders recommended protection actions; beach nourishment with limited hard structures is the best immediate option, while the ICZM approach is the best available strategic option.
- v. **CO<sub>2</sub> Projection for Energy Sector:** This study refined the earlier general assumptions, which were used to construct a baseline projection of future CO<sub>2</sub> emissions in Egypt. The report described the main activities that were undertaken to estimate future levels of CO<sub>2</sub> emissions from energy related activities and sources. It highlighted difficulties encountered by the project team, and measures taken to overcome them. Finally, the report summarized the results of the projections of the energy related CO<sub>2</sub> emissions in Egypt.
- vi. **Technology Assessment Reports:** As part of the assessment of policies and measures to mitigate climate change, a set of seven efficiency technologies were selected for thorough evaluation. Such technologies, in addition to their economic and environmental attractiveness, have already been used or at least demonstrated in Egypt through the activities of the Organization for Energy Conservation and Planning (OECF), the Energy Conservation and Environment Project (ECEP), and the New and Renewable Energy Authority (NREA).

The titles of the studies that were carried out within the “Building Capacity for Egypt to Respond to the UNFCCC Communication Obligation” Project were:

- vii. **Agricultural and Land Use Change, a Sector Profile:** The report discussed elements of the agriculture and land use change in Egypt. The report highlighted the fact that although the agricultural sector was heavily dominated by the government up to the 1970s. In the 1980s, as a result of drastic reforms of agricultural policies were introduced and it now stands at the forefront of other sectors of the national economy in initiating liberalization and privatization reforms.
- viii. **Estimation of Emission Factor for Mobile Sources, Gasoline Motor Vehicles:** An inventory of national emissions of GHGs required reliable estimates of emission factors for mobile sources, e.g. the road transportation sector. In Egypt, a pilot program for vehicle tune-up was implemented in 1995. The pre-tuning data was utilized to develop more compatible emission factors. The methodology developed employed the mass balance of the combustion chemical reactions to calculate EFs of CO and CO<sub>2</sub> in mass units (g/kg fuel). EFs of unburned hydrocarbons (HC) were estimated, considering the exhaust volume, (moles), HC concentration (ppm) and average molecular weight of hydrocarbons compounds, based on relevant detailed analysis of exhaust gases.
- ix. **Solid Waste Management in Egypt, A Sector Profile:** According to this study, the main problems facing the solid waste management systems in Egypt are: lack of institutional support, insufficient funds, inadequate technical specifications for issuing licenses, insufficient law enforcement, lack of experience in solid waste collection, insufficient community participation, lack of solid waste landfills, and absence of a waste recycling policy.
- x. **Mitigation Options in the Agricultural Sector:** The report covers mitigation options for : methane emissions from rice cultivation, methane and carbon dioxide emissions from livestock, and N<sub>2</sub>O from soil.
- xi. **Liquid Waste Management in Egypt, a Sector Profile:** This report provides a profile for wastewater management in Egypt, present and future (planned and suggested) projects. It includes both municipal and industrial liquid wastes, and it addresses each one of them as a separate issue. Among the recommendations proposed by the study are: the need for capacity building in various areas related to

compliance machinery, establishment of lines of command and communication between various entities pertinent to liquid waste management, and giving the highest priority to the maintenance of the newly developed primary and pretreatment systems.

- xii. **Transportation, A Sector Profile:** The main objectives of this report are to present the amount of GHGs emitted from the transportation sector in Egypt taking into consideration the transport activities and the local specific energy consumption, to define and identify abatement policies and programs of transport-related GHGs, and to develop a recommendation catalogue for needed actions in Egypt to reduce the GHGs generated from mobile sources in the target year 2015. For evaluation, the different scenarios are compared with a reference scenario which is based on the current transport policies and “business as usual” travel behavior.
  - xiii. **GHG Assessment of Scenario Development for the Energy Sector in Egypt:** The objective of this report is to estimate the future potential reduction in the levels of CO<sub>2</sub> emissions from energy related activities/ sources including energy and transformation sectors (Petroleum and Electricity), industry, transport and small combustion sectors from the Business As Usual scenario, BAU, or base-line scenario. The Intergovernmental Panel on Climate Change,( IPCC) provided basis for factors used for estimating the GHG emission. The time horizon of the current study covers the next four national five year plans (till year 2017).
  - xiv. **Underground Metro as A GHG Mitigation Option:** The report covers the underground transit system in the context of an integrated urban transport system and evaluates the potential impact of the metro in both Cairo and Alexandria.
145. The technology assessment was followed by another study “Assessment of Scenario Development for the Energy Sector In Egypt”, aimed at estimating the future potential reduction in the level of CO<sub>2</sub> emissions from energy- related activities /sources for the next four National Plans till the year 2017. Based on the base line scenario for energy and CO<sub>2</sub> emissions, the study tried to identify and assess a number of measures /technology for mitigating CO<sub>2</sub> emissions. These selected measures and technologies were classified into the following scenarios:
- Fuel Substitution Scenario, FSS
  - Use of Renewable Energy in Electricity Production Scenario, RES
  - Energy Efficiency Scenario, EES

The energy saving for the three scenarios, fuel substitution, renewable energy and energy efficiency were found to reach about 7.81, 45 and 2.92 PJ in Year 2000/1 and about 19.64, 117.4 and 70.68 PJ in 2016/17 respectively. The corresponding CO<sub>2</sub> reduction is expected to reach about 2.345 and 2.055 million tons in 2000/1 and about 5.863 and 4.28 million tons in 2016/17 respectively.

## 2. Project Strategy

146. The goal of this project is to prepare the Egypt’s Second National Communication through building on the previous work carried out under Egypt’s First National Communication, Technology Needs Assessment and other climate change related activities which *lays a sound ground and baseline* for developing such a product. Working with *priority areas / issues* selected under the stocktaking exercises would be under the main focus. As a result of such strategy the components prepared under Second National Communication will be of a higher quality than those prepared under First National Communications.
147. The strategy of the project is to *involve experts who worked in climate change and related fields* and institutions that have already been involved for the purpose of facilitation of administrative arrangements. New qualified experts in the relevant fields and institutions should be invited to join the SNC teams. This strategy will enhance the sustainability of the teams and the process of preparation of national communication. . This will also foster internal networking of national experts. The project

will hire a short-term international consultant if and when necessary.

148. The strategy of *partnership* with governmental institutions, international organizations, academia and NGOs that was found to be successful from the experience with Egypt's INC will be utilized and improved by bringing more stockholders on board and building partnership with the private sector that is crucial for promoting investments of cleaner technologies. The role of the Project Steering Committee will be critical to the success of this strategy.
149. The initial *emphasis* of the project will be on GHG inventory and assessment of vulnerability for the selected areas. Building on results of these studies, the options to mitigate climate change by addressing GHG emissions and facilitating adaptation to climate change for the selected areas will be analyzed and reviewed in the light of country development context. Gaps, uncertainties and constraints along with other information related to the UNFCCC will be addressed as indicated by 17/CP8.

### **3. Project Development Objectives**

150. The **development objective** of this project is to develop and enhance national capacities and facilitate the process of mainstreaming climate change issues into national planning and policy, thus enabling the country to deal with climate change and consider it not only as environmental issue but as an issue of sustainable development.
151. The project will contribute to the global effort to better understand the sources and sinks of greenhouse gases, potential impacts of climate change, and effective response measures to achieve the ultimate objective of the UNFCCC, which is "to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".
152. The project will identify and to the extent feasible, develop projects related to climate change and mitigation of its impacts; projects which may be eligible for further funding or co-funding by GEF and other multilateral or bilateral organizations, or eligible for funding under Clean Development Mechanism.
153. In addition, the project will contribute to enhancing general awareness and knowledge on climate change related issues in Egypt, and to strengthen the dialogue, information exchange and cooperation among all the relevant stockholders including governmental, non-governmental, academic, and private sectors in accordance to the Article 6 of the UNFCCC and Implementation of Buenos Aires Plan of Action.
154. The **project objective** is to enable Egypt to prepare and submit its Second National Communication to the COP of the UNFCCC in accordance to its commitments as a non -Annex 1 Party to the Convention as mandated by Article 4 and 12 of this Convention.

### **4. Project Activities**

#### **4.1. National Circumstances**

155. Information provided on National Circumstances under Egypt's INC was relevant to the thematic areas. The information provided so far on National Circumstances *lacked* country development context. Knowing the very drastic nature of change of many of relevant economic sectors in the course of the years 1990-2000, there is a *strong need to update* the sectors profiles, especially for energy, transport, agriculture, land use change, industry and waste for such a time frame.
156. Referring to 17/CP8, the National Circumstances chapter under Egypt's SNC will contain updated and additional information on items as indicated by this decision. The *geographic profile* might need some additions such as share of land covered by surface water, international waters that Egypt shares with other neighbors and update on population changes and distribution during the recent years. There is a need to update the *climate profile* with recent extreme weather events and data on temperature and

precipitation for the period 1990-2000. The review and update of the information on *economic and sector profile* will mainly consist on the update regarding the newly adopted strategies.

**Output 4.1.1:** National circumstances reviewed, updated and described.

#### Activities

- i. *Validate the gaps of information* identified under stocktaking exercise in the light of recent /new developments, if any. Responsible party: NPM, TLs, Information & PA Assistant,
- ii. *Identify the respective sources of information* and establish links to get these data as necessary. Responsible party: NPM, TLs, Information & PA Assistant,
- iii. *Collect data and information* from different sources in the course of the project implementation. Responsible party: NPM, TLs, Information & PA Assistant, National Experts,
- iv. *Fill the gaps, update and add the new information* in accordance to the TORs for National Circumstances section of the Egypt's SNC. Responsible party: NPM, TLs, Information & PA Assistant, National Experts,
- v. *Draft national circumstances sections* that would be respectively relevant to each thematic area. Responsible party: TLs, Information & PA Assistant, and National Experts,
- vi. *Draft the National Circumstances section* under the SNC in compliance with the guidelines set by 17CP/8. Responsible party: NPM, TLs, Information & PA Assistant,
- vii. *Circulate the National Circumstances section for comments*, receive comments and incorporate them into the report. Responsible party: NPM, Information & PA Assistant,
- viii. *Finalize the National Circumstances section* under the SNC. Responsible party: NPM, Information & PA Assistant.

#### **4.2: GHG inventory:**

157. The GHGs inventory provided in the INC covered three of the *direct GHGs*, namely: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Emissions of HFCs, PFCs and SF<sub>6</sub> were not covered in the INC. Also, indirect GHGs such as CO, NO<sub>x</sub>, NMVOCs were not covered. Although most source categories were covered in the INC, emissions from some source categories were not included, mainly due to lack of data. Estimates were made for the base year 1990. All *activity data* concerning each sector were national. As regards *emission factors*, in most of the cases they represented default factors provided by IPCC 1996 Revised Guidelines. The major technical *constraint* that faced the inventory process was related to the activity data gaps. *Activity data gaps* were mainly related to the data *availability* (disaggregated activity data or inconsistency with IPCC format) *and their variability after '90s*. In most of the cases, activity data reported were at aggregate form or inconsistent with the IPCC format. Lack of reporting from the private sector due to the lack of respective legislation was identified as a significant constraint for data gathering.
158. A plan that can be put into place for SNC is drafted. It is based on the development of a *soft methodology* for filling the Activity data gaps that would be implemented during the SNC preparation. *Survey method* stands in the heart of such methodology. It will be used for priority categories selected from the key source analysis in order to fill the activity data gaps, which do not exist in disaggregate form.
159. Egypt's second national GHG inventory will cover all sources and sinks as well as all gases as mandated by 17/CP8. In addition to those reported under INC estimates of new gases such as *HFCs*, *PFCs* and *SF<sub>6</sub>* will be provided. Estimates of the *key sources*, *sensitivity analysis* and *uncertainty level* will be provided. *CO<sub>2</sub>/GDP* and *CO<sub>2</sub>/Capita* would be estimated mainly for comparability purposes.

Estimates under Egypt's second national GHG inventory will be made for the *base year 2000*. Re-estimates for the year 1990 will be made as well. Given the variability of activity data after '90s the team has agreed to develop *time series for a 10-year time frame (1990-2000)* in order to provide a clear view of the emission trends. This will also create a clear background for the abatement analysis.

**Output 4.2.1:** The GHG inventory team maintained and strengthened.

Activities:

- i. Identify and mobilize national experts in targeted sectors and areas of relevance. Responsible party: TL,
- ii. *Review the existing information on the first GHG inventory already archived and documented in the GHG Inventory Manual of Procedures.* Responsible party: TL, National Experts,
- iii. Identify all new sources of information for filling data gaps. Responsible party: TL, National Experts.

**Output 4.2.2:** Methodologies for GHG inventory estimates analyzed, selected and validated.

Activities:

- i. *Analyze the acceptability of the available methodologies* of estimates under the Egypt's specific conditions for each category. Responsible party: TL, National Experts,
- ii. *Decide on the Tier level based on the decision trees as guided by IPCC GPG.* Responsible party: TL, National Experts,
- iii. *Decide and select the methodology for estimates* of emissions from the new group of GHG gases such as HFCs, PFCs and SF<sub>6</sub>,
- iv. *Decide on the source categories* to which surveys for filling data gaps will be carried out. The questionnaires are developed under the GEF regional project on GHG inventories. Responsible party: NPM, TL, National Experts,
- v. *Develop and implement QA/QC plan.* Responsible party :NPM, TL.

**Output 4.2.3:** GHG inventory data collection

Activities:

- i. *Review available activity data already archived.* Responsible party: TL, National Experts,
- ii. *Identify new activity data* needed for estimates of GHG emissions for 1990-2000. Responsible party: TL, National Experts,
- iii. *Identify possible sources of data* for estimates of GHG emissions for 1990-2000. Responsible party: TL, National Experts,
- iv. *Collect the necessary activity data* from the available sources. Responsible party: TL, National Experts,
- v. *Undertake surveys* to get the data that did not exist for the year 2000 for those categories considered as priority ones. Use interpolation method for getting the data for 1990-2000. Responsible party: TL, National Experts.
- vi. *Decide on EFs to be utilized.* Analyze the suitability of IPCC Emission Factors to Egypt's circumstances. Identify national studies that can provide EFs. Responsible parties: NPM, TL, National

Experts,

vii. *Identify data gaps*. Responsible party: TL, National Experts.

**Output 4.2.4:** A completed national inventory of anthropogenic greenhouse gas emissions by sources and removals by sinks for 2000 following the guidelines adopted by the COP (17/CP8) developed. Time series 1990-2000 developed.

Activities:

- i. *Re-estimate GHG emissions inventory for 1990*. Responsible party: TL, National Experts,
- ii. *Estimate the GHG emissions inventory for 2000 and develop time series for 1990-2000*. Responsible party: TL, National Experts,
- iii. *Prepare a draft inventory of anthropogenic greenhouse gas emissions by sources and removals by sinks for 2000 and time series for 1990-2000 following the guidelines adopted by COP*. Responsible party: TL, National Experts,.
- iv. *Develop key sources analysis (year 2000) and sensitivity analysis (years 1990-2000) as guided by IPCC GPG*. Responsible party: TL, National Experts,
- v. *Develop a key sources inventory for 2000*. Responsible party: TL, National Experts,
- vi. *Undertake uncertainty assessment as guided by GPG IPCC*. Responsible party: TL, National Experts,
- vii. *Circulate the inventory for internal review as part of QA/QC plan*. Responsible party: NPM, TL, National Experts,
- viii. *Technical peer review performed as part of QA/QC plan*. Responsible party NPM, TL, NCSU.
- ix. *Organize a national workshop to present findings from the GHG inventory exercise and get more comments*. Responsible party NPM, TL,
- x. *Incorporate comments received from the review process*. TL, National Experts,
- xi. *Finalize the inventory to be submitted as a part of the SNC of Egypt*. NPM, TL, National Experts.

160. **Output 4.2.5:** GHG inventory data and estimates documented and archived

Activities:

- i. *Archive activity data, emission factors and estimates*. Responsible party: TL, National Experts, and Information & PA Assistant,
- ii. *Update GHG inventory data and estimates*. Responsible party: TL, National Experts, and Information & PA Assistant

**4.3. Programs containing measures to mitigate climate change**

161. Quantitative abatement analyses were conducted for the energy sector. In one of the studies, the costs of abatement of two scenarios to reduce CO<sub>2</sub> emissions by 25% and 50% in the time horizon of 1990-2020 were evaluated. Fifty seven abatement measures were selected to achieve the targeted reductions. The Stand Alone Technology Assessment Reports of the SNAP (Support for National Action Plan) study evaluated the cost effectiveness and socioeconomic impact of 7 energy efficiency technologies

that are used in Egypt.

162. In the INC, qualitative abatement analysis was provided for the *transport, agriculture, and waste* sectors. The abatement scenarios for the agriculture sector introduced qualitative comparisons of emissions in the baseline scenario (reference scenario) with the changes of emissions introduced by various abatement options being evaluated. For the waste sector, no specific abatement technologies were evaluated.
163. The GHG abatement analysis under the SNC will be sector – specific, by covering the same sectors as previous studies but putting *a high emphasis under energy and transport* sector which contribute a significant share to the Egypt’s overall emissions. The GHG inventory base year 2000 will serve as the starting point of the GHG analysis. The GHG abatement analysis will go up to 2025. There is also a need to update and revise *details and assumptions* made. The list of abatement options proposed for the abatement scenario for each sector will be *reviewed and updated* in the light of new developments and needs and key source categories. The impact of specific emission reduction actions / options will be measured (quantitative if possible) against the baseline scenario. The cost and benefit will be analyzed. Criteria of prioritization will be revisited and updated as well. In the course of the selection process the stocktaking team agreed to consider two distinct Tiers of options/measures (Tier 1 and Tier 2) as following:
  - *Win-win* options /measures that could be deliver / implement faster, cheaper and easier.
  - Long – term options that need significant resources.
164. The scenarios for energy, including transport sector will be based on selected software (the latest version). As per other sectors the team will consider the possibility of utilizing appropriate models/ software such as STAIR or DSSAT for Agriculture. IPCC Excel Spreadsheets will be utilized in case that no specific software will be available. Selection of abatement options will be done through a multi criteria analysis

**Output 4.3.1:** Necessary data and relevant information for scenario development collected analyzed and fed into the scenario development.

Activities:

- i. *Consider estimates of GHG inventory for the base year 2000*, which will serve as starting point for the analysis of the GHG emissions towards 2025; Responsible party: TL and, National Experts,
- ii. *Collect all relevant macro-economic data* and set *assumptions* to be made for the purpose of emission scenario development. Responsible party: TL, Information and PA Assistant and, National Experts,
- iii. *Assess at what extent GHG abatement measures (if any) are undertaken (if so) into all adopted National Strategies and Action Plans.* Responsible party: NPM, TL, Legal expert, PSC, National Experts,
- iv. *Review the status of the relevant policy and legal framework* in cooperation with all relevant Ministries. Responsible party: NPM, TL, Legal expert, National Experts,
- v. *Process the collected data and make them ready* as required by the software that are going to be utilized for the purpose of scenario generator. Responsible party: TL, Information and PA Assistant and, National Experts.
- vi. *Develop a Geographic Information System for major GHGs sources.* Responsible party: TL, National Experts.

**Output 4.3.2:** Training of Staff on Abatement Models.

Activities:

- i. *Training on the selected Energy model that will be used in the abatement analysis of the energy sector.* Responsible party TL, National experts.
- ii. *Training on the STAIR model that will be used in the abatement analysis of the Transportation and Industry sectors.* Responsible party TL, National experts.
- iii. *Training on the DSSAT model that will be used in the abatement analysis for agriculture.* Responsible party TL, National experts.

**Output 4.3.3:** Development of a revised GHG baseline scenario.

Activities:

- i. *Develop a revised baseline GHG emission scenario for energy & transport for 2000-2025 by using the selected software.* Responsible party TL, National experts,
- ii. *Develop a revised baseline GHG emission scenario for the rest<sup>3</sup> of sectors (non-energy ones) for 2000-2025 by using STAIR or DSSAT for agriculture and IPCC for the rest.* Responsible party TL, National experts.

**Output 4.3.4:** The tier of GHG abatement measures / technology options revisited and revised.

Activities

- i. *Re-visit the list of GHG abatement measures /technology options already developed under INC for each sector under analysis.* Responsible party NMP, TL, National experts.
- ii. *Add new GHG abatement measure/technology options, if data available.* Put a special attention to *energy and transport category.* Responsible party NMP, TL, National experts.

**Output 4.3.5:** GHG abatement scenario developed / updated

Activities

- i. *Develop/ update the GHG abatement scenario for energy, transport, Industry and agriculture category for 2000-2025 by using the selected software.* Take into consideration the tier of measures selected. Responsible party TL and, National experts,
- ii. *Estimate the GHG reduction potential against the baseline scenario, cost of reduction and penetration rate of each measure proposed under GHG abatement scenario for energy and transport sector.* Responsible party TL and, National experts,
- iii. *Develop / update the GHG abatement scenario for non-energy sectors.* Use IPCC software if other sector-specific software would not be available. Take into consideration the tier of measures selected. Responsible party TL and, National experts.

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<sup>3</sup>agriculture, waste and industrial processes;

- iv. *Develop a package of project proposals for addressing each selected technology option.*  
Responsible party TL and, National experts

**Output 4.3.6:** GHG abatement priority measures / technologies selected

Activities

- i. *Undertake an assessment of measures according to the criteria decided by using a multi-criteria analysis.* Select 4-5 priorities for energy and transport. In addition, develop a second tier of win-win measures that could be implemented faster, cheaper and easier. Select up to 2 priority measures for non-energy sectors. Responsible party NPM, TL, National experts, PSC,
- ii. *Identify barriers and policy needs* for implementation of such measures. Propose *policy interventions and financing schemes* (GEF, WB, CDM, bilateral, other) to address these measures into national planning and policy process for respective sectors. Responsible party NPM, TL, National experts, PSC, Legal expert.

**Output 4.3.6:** A GHG abatement analysis completed for the period 2000-2025.

Activities

- i. *Develop the draft chapter* of the GHG abatement analysis. Responsible party TL,
- ii. *Circulate the draft chapter of GHG abatement analysis for internal review and comments.*  
Responsible party NPM, TL,
- iii. *Circulate the draft chapter* of GHG abatement analysis for external peer review and comments.  
Responsible party NPM,
- iv. *Receive comments and reflect* to the document. Responsible party NPM, TL, National experts,
- v. *Organize a national workshop* to highlight findings from the GHG abatement analysis and get more comments. Responsible party NPM, TL,
- vi. *Finalize the GHG abatement analysis chapter* to be submitted as a part of the SNC of Egypt.  
Responsible party NPM, TL, National Experts,
- vii. *Archive and document all the GHG abatement analysis related studies and estimates.* Responsible party NPM, TL, National Experts.

**4.4 Programs containing measures to facilitate adequate adaptation to climate change**

165. Designing of an Adaptation Policy Paper for the selected areas by using at the extend possible the Adaptation Policy Framework (APF) and respective Technical Papers will be the main outcome of the vulnerability and adaptation exercise under the SNC. The strategy paper will outline adaptation measures and plans of implementation (what); the way of implementation and resources needed (how); time frame (when); responsible parties for its implementation (who). It will serve as the basic document that will create the momentum for a follow-up of this process, i.e. addressing climate variability and change to the national planning and policy.

**Output 4.4.1:** Specific approaches, tools and methods to be used under APF decided. Pertinent data and information assembled, analyzed, and synthesized.

### Activities

- i. *Decide on the range of the assessment:* qualitative versus quantitative. Decide on the *approaches, tools and methods* to be used for the assessment. Responsible party NPM, TL, and National Experts,
- ii. *Identify the type and scope of data and information* needed in order to use the above models and tools. Responsible party NPM, TL, and National Experts,
- iii. *Review the policy process and development context for the selected area* in order to explore how adaptation measures can be introduced into decision-making agenda and what is the best way of addressing them. Responsible Party: NPM, PSC, TL, National Experts,
- iv. *Collect and synthesize the necessary data and information.* Responsible party: TL, and National Experts

**Output 4.4.2:** Current vulnerability and adaptation of the priority selected area assessed

### Activities

- i. *Develop respective indicators* for the purpose of the baseline development. Responsible party: NPM, PSC, TL, and National Experts,
- ii. *Develop a climate baseline* for the priority areas by highly taking into consideration the baseline developed under stocktaking exercise. Responsible party: TL, and National Experts,
- iii. *Develop an environmental-socio-economic baseline.* Responsible party: TL, and National Experts,
- iv. *Access current vulnerability of climate and sectors under the priority area.* Responsible party: TL, and National Experts
- v. *Access any previous adaptation experience* under priority area, if available. Responsible party: TL, and National Experts

**Output 4.4.3:** Future climate risk and adaptation measures assessed for the priority areas.

### Activities

- i. *Develop climate trends and risks.* Responsible party: TL, and National Experts,
- ii. *Develop environmental-socio-economic trends and risks* (water resources, energy, agriculture, tourism, population and settlements). Put more attention to waters resources and energy generation as priorities. Responsible party: TL, and National Experts,
- iii. Monitoring of impact of the climate change on Health through activities:  
Temperature-related illness and death, Extreme weather related health effects, Air pollution-related health effects, Water and food borne diseases, Vector borne and rodent-borne diseases, Effects of food and water shortages, Mental, nutritional, infectious and other health effects (e.g. schistosomiasis, respiratory diseases, and fungal infections), Migration related diseases and Emergence outbreaks,
- iv. Building capacity of the medical personnel and hygiene volunteers through:
  - Determination of their training needs.
  - Assessment of their **knowledge, attitude and practices** (KAP) prior to the training through structured questionnaire covers the main topics.

- Training course for improving their knowledge and skills.
- v. *Develop adaptation response measures*, identify barriers and opportunities. Responsible party: TL, and National Experts.
- vi. *Develop a GIS system using satellite imagery to assess the CC impacts on coastal zones*. Responsible party: TL, and National Experts.

**Output 4.4.4:** Chapter of Vulnerability and Adaptation (V&A) for the priority system completed

Activities

- i. *Develop the draft chapter* of the V&A. Responsible party TL,
- ii. *Circulate the draft chapter of V&A for internal review and comments*. Responsible party NPM, TL,
- iii. *Circulate the draft chapter of V&A for external peer review and comments*. Responsible party NPM,
- iv. *Receive comments and reflect* to the document. Responsible party NPM, TL, National experts,
- v. *Organize a national workshop* to highlight findings from the V&A study and get more comments. Responsible party NPM, TL,
- vi. *Finalize the V&A chapter* to be submitted as a part of the SNC of Egypt. Responsible party NPM, TL, National Experts,
- vii. *Archive and document all the V&A related studies and estimates*. Responsible party NPM, TL, National Experts.

**4.5. Constraints, gaps, and related financial, technical and capacity needs**

166. Research gaps and needs were addressed on the INC. Needed research related to the science of climate, impacts of climate change as well as policy related research have been addressed while problems, gaps, constraints that have faced the INC preparation exercise have not been discussed.
167. A separate section will be elaborated on the issue under Egypt's SNC. New gaps and constraints if any, identified while undertaking each section of the SNC, would be reported along with related financial and technical capacity needs. A special attention will be paid to the *previously identified gaps and needs* under the previous activities such INC, Top-Ups and Regional project on GHG inventories, explanations whether and how they have been addressed under the SNC and their status. In addition, gaps and constraints while implementing the UNFCCC will be reported.

**Output 4.5.1:** Constraint, gaps and related needs (financial, technical and capacity) identified and reported.

Activities

- i. *Review the status of the constraints and gaps (technical, institutional, methodological, financial, and capacity)* from previous studies. Responsible party: NPM, TLs, National Experts,
- ii. *Identify new constraints and gaps (technical, institutional, methodological, financial, capacity), if any* related to each thematic area (inventory, abatement analysis, V&A) and elaborate needs to overcome and fill them. Responsible party: NPM, TLs, National Experts,
- iii. *Identify constraints and gaps (institutional, financial, and capacity) related to Article 6 activities*,

*which are crosscutting the NC preparation exercise.* Elaborate needs to overcome and fill them. Responsible party: NPM, Information and PA assistant; TLs, National Experts,

- iv. *Summarize constraints, gaps and needs* identified and draft a synthesis report as a separate chapter on that regard. Responsible party: NPM, TLs, National Experts,
- v. *Distribute the above draft chapter for comments, collect comments and reflect in the document.* Responsible party: NPM, TLs, Information and PA assistant. National Experts,
- vi. *Finalize the above chapter* as part of the Egypt's SNC. Responsible party: NPM, TLs, Information and PA assistant.

#### **4.6 Other information considered relevant to the achievement of the objective of the Convention**

168. The Egypt's INC contains also a separate chapter regarding Public Awareness, Education and Training. This chapter highlights these issues as relevant and crosscutting ones to the NC preparation exercise. Egypt's SNC will have a separate chapter on "other information". A special attention will be given to information about *Article 6 activities* (Public Awareness, Education, and Training). This section will also provide information on any steps that have been taken to *mainstreaming climate change* into national development agenda and activities related to *technology transfer* as indicated under Article 4/CP7 and, climate change research and systematic observation systems. In addition, information on all relevant ongoing projects / programs relevant to climate change will be reported.

**Output 4.6.1:** The information considered relevant to the achievement of objective of the UNFCCC compiled and synthesized

##### Activities:

- i. Collect, synthesize and provide the overall *information relevant to the Article 6 activities.* Responsible Party: NPM, Information and Public awareness assistant, TLs,
- ii. Collect, synthesize and provide the *information on steps taken to integrate climate change* into socio-economic and environmental policies in Egypt. Responsible Party: NPM, Information and Public awareness assistant, TLs, National Experts,
- iii. Collect, synthesize and provide information on how Egypt is addressing activities related to the *transfer of, access to environmentally sound technologies and know-how.* Responsible Party: NPM, Information and Public awareness assistant, TLs, National Experts,
- iv. Collect, synthesize and provide information on the *research and systematic observation systems.* Responsible Party: TL of V&A, Information and Public awareness assistant, National Experts,
- v. Collect, synthesize and provide *information on ongoing programs and project relevant to climate change and National Communication* process. Responsible Party: NPM, Information and Public awareness assistant, TLs, National Experts,
- vi. *Summarize all the information* collected in a draft chapter. Distribute it for *review and comments* (internally). Responsible Party: NPM, Information and Public awareness assistant, TLs, National Experts,
- vii. Incorporate comments to the above draft chapter and *finalize* it as part of the Egypt's SNC. Responsible Party: NPM, Information and Public awareness assistant, TLs.

## **Output 4.6.2: SNC prepared, submitted and disseminated**

### Activities:

- i. Compile a draft of the Egypt's Second National Communication;
  - ii. Circulate the draft for comments and review and incorporate them;
  - iii. Endorse the document by the PSC;
  - iv. Finalize the Second National Communication of Egypt;
  - v. Publish Egypt's SNC to the COP of UNFCCC;
  - vi. Prepare e-Copies of Egypt's SNC in CD-ROMs;
  - vii. Submit officially Egypt's SNC to the COP of the UNFCCC;
  - viii. Organize a national workshop to launch and present the findings of the Egypt's SNC;
  - ix. Launch the report in a side event during the COP /Subsidiary Body sessions;
169. The overall findings from the studies carried out under the SNC project will be synthesized in reported under a National Report namely Egypt's Second National Communication to the COP of UNFCCC. The structure and scope of the report will be designed as guided by the 17/CP.8. The draft report will be circulated for comments and review and will be endorsed by the PSC. The report will be published in English. An electronic version in a CD-ROM will be attached to it. The SNC report will be submitted to the UNFCCC secretariat and distributed internally (to the relevant stockholders) and externally (to the Parties). It will be internally launched in a national workshop and externally to a CC: FORUM to be organized as a side event in the course of the nearest COP/ Subsidiary Body sessions.

## **5. Institutional Framework for Project Implementation**

170. This exercise will utilize the National Execution modality with the Ministry of State for Environmental Affairs (MSEA) as the Executing Agency. Given that responsibility; the MSEA will supervise the overall management of the project, primarily with regard to the achievement of the outputs (results), impact and objectives. Similarly, MSEA will be accountable to UNDP for use of project resources.
171. In order to ensure sustainability, efficient use of resources and linkages between prior and ongoing climate change enabling activities, the SNC processes will be fully executed under the same structures, already established since 1996, when Egypt's INC started. In the course of the last years the Project Implementation Unit already based in the Ministry of Environment has merged to the Climate Change Unit being fully responsible not only for the planning, coordination and management of UNDP-GEF climate change portfolio but also for the overall UNFCCC implementation process.
172. The National Project Manager (NPM), to be hired on full-time basis, will coordinate the day-to-day project execution activities and will be responsible for meeting the objectives of the project. An Administrative and Finance Assistant and an Information and Public Awareness Assistant who will be hired in full –time basis, will assist the NPM. In addition the NPM will be assisted by three technical teams, respectively GHG inventory team, GHG abatement team and V&A team which , will perform technical tasks and activities proposed under this project. A National Team Leader will lead each team. It is expected that this exercise to involve the majority of the experts who have been previously engaged under First National Communication and Top-up phase. They are already filed in a roster of national experts. However, new comers are expected to enter the process as Train of Trainers exercises will be held in the course of the years to come. National experts will be coming from key relevant sectors including government agencies, academic institutions, NGOs, and private sector as necessary. National experts mentioned above will be hired in Ad-Hoc basis under Special Service Agreements. The recruitment process will be made according the UNDP rules and regulations.
173. The National Climate Change Committee already established as a high level body will continue to provide support and guidance to the implementation of the project and support this exercise by

ensuring that the results will be disseminated to, and validated by, all the relevant stockholders in Egypt. The members of the PSC will be from, but not limited to the Ministry of State for Environmental Affairs, Ministry of Water Resources, UNDP Cairo, NGOs, Academia, Private sector.

174. The project will maintain links to the UNDP-GEF NCSP, which will be regularly updated through UNDP regional office for the status of activities and will provide in the same time technical assistance as required. Technical assistance is also expected to be provided by the UNFCCC secretariat /Consultative Group of Experts (CGE), mainly through the workshops and trainings.
175. A summary of the institutional arrangements for the project for preparation of Egypt's SNC to the COP of the UNFCCC is provided in a chart form under Appendix F
176. During the project inception phase project key personnel will be contracted that includes: a full-time National Project Manager (NPM), Administrative & Finance Assistant and Information & Public Awareness Assistant. Terms of Reference for the NPM are provided in Appendix G. *Technical teams will be established*. Short-term experts will be recruited as and when needed by the project, possibly including Team Leaders for each thematic area and technical experts as member of the teams. Terms of Reference for Team Leaders are provided in Appendix G. PSC composition will also be updated during the inception phase. Once the project implementation mechanisms have been in place a *project initiation workshop* will be organized aiming at presenting objectives and activities of the project; clarifying the link between previous, ongoing and future climate change activities; identifying possible synergies with other projects; finalizing the project work plan and TORs. This workshop will also serve at raising awareness among the invited stockholders about climate change issues.
177. A special meeting - a *scoping meeting* will also be organized for the national experts. The TORs of the SNC which will consist on structure and content of each chapter of Egypt's SNC will be drafted at the start up phase of the project and discussed during a scoping meeting with Team Leaders, Experts and PSC members.
178. As part of the project implementation set up mechanisms of communication, participation, networking and dissemination will be decided and established. The network of e-communication will be established for the purposes of effective communication and dissemination of relevant information received from UNFCCC, UNDP/GEF NCSU, UNIDO, IPCC, CC:INFO, CC: TRAIN, TT CLEAR, CTI networks and UNDP Knowledge Management Network, if available. The project will maintain and upgrade the electronic network among national experts / institutions to ensure an effective communication and dissemination of project relevant information and will also update and maintain the national climate change web page.

#### **Assessing Project impact:**

179. As explained under the project strategy, mobilizing national expertise, archiving the overall data and information utilized under the National Communication exercise, raise awareness and advocacy to climate change issues in Egypt, working in synergy with other projects / programs would help to increase the sustainability of the process for preparation of the National Communication.

## 7. Detailed work-plan

Outputs/Activities	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
<b>Implementation arrangements and project inception:</b>												
1. Contract the project office staff	X											
2. Establish technical teams	X											
3. Update the composition of the Project Staff Contact (PSC)	X											
4. Organize a project initiation workshop	X											
5. Organize a scoping meeting	X											
6. Maintain and upgrade the electronic network among experts/institutions	X	X	X	X	X	X	X	X	X	X	X	
7. Update and maintain the national climate change web page	X	X	X	X	X	X	X	X	X	X	X	X
<b>4.1: National circumstances</b>												
1. Validate the gaps of information identified under stocktaking	X	X										
2. Identify the respective sources of information	X	X										
3. Collect data and information from different sources	X	X	X	X	X							
4. Fill the gaps, update and add the new information		X	X	X	X	X						
5. Draft national circumstances sections relevant to each thematic area.						X	X	X				
6. Draft the National Circumstances section under the SNC								X	X			
7. Circulate the National Circumstances section for comment, get comments.									X			
8. Finalize the National Circumstances section under the SNC										X		
<b>4.2: GHG inventory</b>												
<b>4.2.1 The GHG inventory team maintained and strengthened</b>												
1. Identify and mobilize national experts in targeted sectors and related areas of relevance	X	X										
2. Review the existing information on the previous GHG inventory and familiarize with guidelines	X	X										
3. Identify all new sources of information for filling data gaps		X										
<b>4.2.2 Methodologies for GHG inventory estimates analyzed, selected and validated</b>												
1. Analyze the acceptability of the available methodologies estimates	X	X										
2. Decide on the Tier level based on the decision trees as guided by IPCC GPG	X	X										
3. Decide and select the methodology of estimates new gases: HFCs, PFCs, SF <sub>6</sub>		X	X									
4. Decide on the source categories to which surveys for filling data gaps will be carried out		X	X									
5. Develop the QA/QC plan		X	X									
<b>4.2.3: GHG inventory data collected</b>												
1. Review available activity data already archived		X	X									
2. Identify new activity data needed for estimates of GHG emissions for 1990-2000			X	X								
3. Identify possible sources of data		X										
4. Collect the necessary activity data from the available sources		X	X									
5. Undertake surveys to obtain unavailable data			X	X								

<b>Outputs/Activities</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q5</b>	<b>Q6</b>	<b>Q7</b>	<b>Q8</b>	<b>Q9</b>	<b>Q10</b>	<b>Q11</b>	<b>Q12</b>
6. Decide on EFs to be utilized.			X	X								
7. Identify gaps, if available.		X	X	X	X							
<b>Output 4.2.4: A completed national inventory for 2000 along with time series 1990-2000 developed</b>												
1. Re-estimate GHG emissions inventory of 1990				X								
2. Estimate the GHG emissions inventory for 2000 and develop time series for 1990-2000				X	X							
3. Prepare a draft inventory for 2000 and time series 1990-2000					X	X						
4. Develop key sources analysis for 2000 and sensitivity analysis (1990-2000)						X	X					
5. Develop a key sources inventory for 2000.							X					
6. Undertake uncertainty assessment							X					
7. Circulate the inventory for internal review as part of QA/QC plan							X					
8. Technical peer review performed as part of QA/QC plan								X				
9. Organize a national workshop to present findings of the GHG inventory									X			
10. Incorporate comments received from the review process.									X	X		
11. Finalize the inventory to be submitted as a part of the SNC of Egypt										X		
<b>Output 4.2.5: GHG inventory data and estimates documented and archived</b>												
1. Archive activity data, emission factors and estimates					X	X	X	X	X			
2. Update new GHG inventory data and estimates.					X	X	X	X	X	X	X	
<b>4.3. Programs containing measures to mitigate climate change</b>												
<b>4.3.1: Necessary data and relevant information for scenario development collected, analyzed and taken into consideration for scenario development.</b>												
1. Consider estimates of GHG inventory for the base year 2000					X							
2. Compare figures /estimates obtained under the GHG Inventory for 2000 to those figures forecasted for the same year (2000) under Egypt's INC					X	X						
3. Collect all relevant macro-economic data and set assumptions		X	X	X	X							
4. Assess at what extend GHG abatement measures (if any) are undertaken (if so) into all adopted National Strategies and Action Plans.						X						
5. Review the status of the relevant policy and legal framework		X	X	X	X	X						
6. Process the collected data and make them ready as required by the software that are going to be utilized					X	X						
7. Develop a Geographic Information System for major GHGs sources			X	X	X	X						
<b>Output 4.3.2 Training of Staff on Abatement Models</b>												
1. Training on the selected Energy model						X	X					
2. Training on the STAIR model						X	X					
3. Training on the DSSAT model						X	X					
<b>Output 4.3.3 A revised GHG baseline scenario developed.</b>												
1. Develop a revised baseline GHG emission scenario for energy & transport						X	X					
2. Develop a revised baseline GHG emission scenario for non-energy scenarios						X	X					
<b>Output 4.3.4: The tier of GHG abatement measures / technology options revisited and revised.</b>												
1. Re-visit the list of GHG abatement measures /technology options							X	X				
2. Add new GHG abatement measure/technology options, if data available						X	X					

Outputs/Activities	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
<b>Output 4.3.5: GHG abatement scenario developed / updated</b>												
1. Develop / update the GHG abatement scenario for energy and transport category						X	X					
2. Estimate the GHG reduction potential, cost of reduction and penetration rate of each measure proposed under GHG abatement scenario for energy and transport sector.						X	X	X				
3. Develop / update the GHG abatement scenario for non-energy sectors								X	X			
4. Develop a package of project proposals								X	X			
<b>Output 4.3.6: GHG abatement priority measures / technologies selected</b>												
2. Undertake an assessment of measures and select 3-4 priorities.								X	X			
3. Identify barriers and policy needs for implementation of such measures.								X	X			
<b>Output 4.3.7: A GHG abatement analysis completed for the period 2000-2025.</b>												
1. Develop the draft chapter of the GHG abatement analysis									X			
2. Circulate the draft chapter of GHG abatement analysis for internal review									X	X		
3. Circulate the draft chapter of GHG abatement analysis for external peer review									X	X		
4. Receive comments and reflect to the document.										X		
5. Organize a national workshop to present findings from the GHG abatement analysis										X		
6. Finalize the GHG abatement analysis chapter to be submitted as a part of the SNC										X		
7. Archive and document all the GHG abatement analysis related studies and estimates						X	X	X	X	X	X	X
<b>4.4. Programs containing measures to facilitate adequate adaptation to climate change</b>												
<b>Output 4.4.1: Specific approaches, tools and methods to be used under APF decided. Pertinent data and information assembled, analyzed, and synthesized.</b>												
1. Decide on the range of the assessment:., approaches, tools and methods		X										
2. Identify the type and scope of data and information needed		X										
3. Review the policy process and development context for the selected area		X										
4. Collect and synthesize the necessary data and information.		X	X	X								
<b>Output 4.4.2: Current vulnerability and adaptation of the priority area assessed</b>												
1. Develop respective indicators for baseline development			X									
2. Access any previous adaptation experience under priority area, if available baseline for the priority area			X									
3. Develop an environmental-socio-economic baseline			X	X								
4. Access current vulnerability of climate and sectors under the priority area			X	X								
5. Access any previous adaptation experience under priority area, if available												
<b>Output 4.4.3: Future climate risk and adaptation measures assessed for the priority area. A policy paper for adaptation for the Drini River Cascade developed</b>												
1. Develop climate trends and risks			X	X								
2. Develop environmental-socio-economic trends and risks			X	X								
3. Monitoring of impact of the climate change on Health				X	X							
4. Building capacity of the medical personnel and hygiene volunteers					X	X						
5. Develop adaptation response measures					X	X						
6. Develop a GIS system using satellite imagery					X	X						
<b>Output 4.4.4: Chapter of Vulnerability and Adaptation (V&amp;A) for the priority system completed</b>												

<b>Outputs/Activities</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q5</b>	<b>Q6</b>	<b>Q7</b>	<b>Q8</b>	<b>Q9</b>	<b>Q10</b>	<b>Q11</b>	<b>Q12</b>
1. Develop the draft chapter of the V&A							X					
2. Circulate the draft chapter of V&A for internal review and comments.								X				
3. Circulate the draft chapter of V&A for external peer review and comments								X				
4. Receive comments and reflect to the document								X	X			
5. Organize e national workshop to present findings from the V&A									X			
6. Finalize the V&A chapter to be submitted as a part of the SNC									X			
7. Archive and document all the V&A related studies and estimates							X	X	X	X		
<b>4.5. Constraints, gaps, and related financial, technical and capacity needs</b>												
<b>Output 4.5.1: Constraint, gaps and related needs (financial, technical and capacity) identified and reported</b>												
1. Review the status of the constraints and gaps from previous studies					X	X	X					
2. Identify new constraints and gaps for each thematic area							X	X				
3. Identify constraints and gaps related to Article 6 activities,							X	X				
4. Summarize constraints, gaps and needs identified and draft a synthesis report as a separate chapter								X				
5. Distribute the above draft chapter for comments, collect comments and reflect in the document								X	X			
6. Finalize the above chapter as part of the Egypt's SNC.									X			
<b>4.6. Other information considered relevant to the achievement of the objective of the Convention</b>												
<b>Output 4.6.1: The information considered relevant to the achievement of objective of the UNFCCC compiled and synthesized</b>												
1. Collect, synthesize and provide the overall information relevant to the Article 6 activities			X	X	X	X						
2. Collect, synthesize and provide the information on steps taken to integrate climate change into socio-economic policies in Egypt.			X	X	X	X						
3. Collect, synthesize and provide information transfer of, access to environmentally sound technologies and know-how in Egypt.			X	X	X	X						
4. Collect, synthesize and provide information on the research and systematic observation systems			X	X	X	X						
5. Collect, synthesize and provide information on relevant ongoing projects						X	X					
6. Summarize all the information collected in a draft chapter. Distribute it for review and comments internally.							X					
7. Incorporate comments to the above draft chapter and finalize it as part of the Egypt's SNC							X	X				
<b>Output 4.6.2. SNC produced, submitted and disseminated</b>												
1. Compile a draft of the Egypt's Second National Communication								X	X			
2. Circulate the draft for comments and review and incorporate them									X			
3. Endorse the document by the PSC									X			
4. Finalize the Second National Communication of Egypt										X		
5. Publish Egypt's SNC to the COP of UNFCCC											X	
6. Prepare e-copies of Egypt's SNC in CD-ROMs										X		
7. Submit officially Egypt's SNC to the COP of the UNFCCC											X	

<b>Outputs/Activities</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q5</b>	<b>Q6</b>	<b>Q7</b>	<b>Q8</b>	<b>Q9</b>	<b>Q10</b>	<b>Q11</b>	<b>Q12</b>
8. Organize a national workshop to launch and present the findings of the Egypt's SNC											X	
9. Launch the report in a side event during the COP /Subsidiary Body sessions												X

**Appendix C: Summary matrix for assessment of priority area under the Vulnerability and Adaptation**

<b>Sub-area</b>	<b>Sector (sub-sector)</b>	<b>Scale of vulnerability</b>	<b>Relevance to national development priorities</b>	<b>Development benefits</b>	<b>Data availability</b>	<b>Sub Area Total</b>
<i>Coastal zones &amp; Sinai</i>	Climate	+++	++	+++	++	10
	Water	+++	+++	+++	+++	12
	Energy	++	+++	+++	+++	11
	Agriculture	++	+++	++	++	9
	Natural ecosystems	++	++	++	++	8
	Tourism	+++	++	+++	++	10
	Population	++	+	++	++	7
						<b>67</b>
<i>Nile Delta</i>	Climate	+++	+++	+++	+++	12
	Water	++	+++	++	+++	10
	Energy	++	++	++	+++	9
	Agriculture	++	+++	+++	++	10
	Natural ecosystems	++	++	++	++	8
	Tourism	++	++	++	++	8
	Population	+++	+++	++	++	10
						<b>67</b>
<i>Greater Cairo area</i>	Climate	+++	+++	+++	+++	12
	Water	++	++	++	+++	9
	Energy	+++	+++	+++	+++	12
	Agriculture	++	++	++	+++	9
	Natural ecosystems	+++	+++	+++	++	11
	Tourism	++	++	++	++	8
	Population	++	++	++	+++	9
						<b>70</b>
<i>Upper Egypt</i>	Climate	++	+++	+++	++	10
	Water	++	+++	++	++	9
	Energy	++	++	++	++	8
	Agriculture	++	++	++	++	8
	Natural ecosystems	++	++	++	++	8
	Tourism	+++	++	++	++	9
	Population	++	++	++	++	8
						<b>60</b>

(N.B.: Selected criteria are weighted +++ for high, ++ for medium & + for low.)

## Appendix D: Stockholders matrix

Institution	Department	Responsibility / Field of Activities	Relevance to Climate Change/ reasons for inclusion	Role in the self assessment process
<b>PUBLIC INSTITUTIONS</b>				
<b>MINISTRY OF STATE FOR ENVIRONMENTAL AFFAIRS (MSEA)</b>	<b>Ministry in general</b>	<p><i>MSEA is the main specialized governmental body responsible for environmental protection in the Arab Republic of Egypt. Responsibilities of MSEA and its directorates and institutions that are under its responsibility and relevant to the climate change are as following:</i></p> <ul style="list-style-type: none"> <li>▪ Drafts and implements governmental policies, strategies and action plans for environmental protection;</li> <li>▪ Drafts laws, by-laws and decisions for the protection of the environment;</li> <li>▪ Follows-up the implementation of laws, by-laws and decisions of the Council of Ministers for Environmental Protection;</li> <li>▪ Coordinates the cooperation between relevant Ministries, local government, research institutions, and NGOs;</li> <li>▪ Supervise the monitoring of the state of environment in collaboration with relevant Ministries, local government, research institutions, and NGOs;</li> <li>▪ Proposes measures, activities and standards to protect water, soil, air and biological diversity;</li> <li>▪ Designs and endorse projects for the protection and remediation of environment;</li> <li>▪ Manages environmental funds provided by the Government of Egypt;</li> <li>▪ Raises awareness on environmental protection and related issues;</li> <li>▪ Issues environmental permission/ licence for all activities that have an impact to environment;</li> <li>▪ Prepares agreements and MoUs, in the framework of bilateral and multilateral co-operation and attends their implementation after their adoption;</li> <li>▪ Oversees the implementation process of all environmental conventions where Egypt is a Party;</li> </ul>	<ul style="list-style-type: none"> <li>▪ MSEA <b>leads</b> the Project Steering Committee;</li> <li>▪ MSEA through its Climate Change Unit (CCU) is <b>responsible</b> for the preparation of National Communications to the COP of the UNFCCC stands under the MSEA along with the overall implementation process of the UNFCCC;</li> <li>▪ The responsibility of the <b>GEF Focal Point</b> (Operational/Political) stands under MSEA;</li> <li>▪ The responsibility of the UNFCCC and <b>IPCC Focal Point</b> stands under CCU;</li> <li>▪ The responsibility of the <b>UNEP</b> and other <b>UN Conventions</b> stands under MSEA;</li> <li>▪ The MSEA is the <b>Executing Agency</b> for UNDP-GEF portfolio for climate change and also for all GEF projects Egypt;</li> </ul>	<ul style="list-style-type: none"> <li>▪ The CCU based under the MSEA <b>led</b> and <b>coordinated</b> the stocktaking exercise at national level being responsible for the preparation of the final stocktaking report and the Project Proposal for Egypt's Second National Communication to the UNFCCC;</li> <li>▪ Directorates, officials and experts of the MSEA are <b>consulted</b> and have provided their inputs and <b>feedback</b> to this process;</li> </ul>

Institution	Department	Responsibility / Field of Activities	Relevance to Climate Change/ reasons for inclusion	Role in the self assessment process
	<b>Climate Change Unit (CCU)</b>	<ul style="list-style-type: none"> <li>▪ Serves as National Focal Point for the UNFCCC and provides technical support and policy advice to the MSEA for its implementation process and represents GoA into the negotiations;</li> <li>▪ Serves as National Focal Point for the IPCC;</li> <li>▪ Prepares inventories of GHG emissions and removals by sources;</li> <li>▪ Regularly archives data and inventory estimates;</li> <li>▪ Develops scenarios of GHG emissions and proposes mitigation policies and measures;</li> <li>▪ Performs assessment of vulnerability and proposes adaptation measures to the expected climate change;</li> <li>▪ Prepares Technology Needs Assessment;</li> <li>▪ Prepares National Communications and arrange their submission to the COP of UNFCCC as mandated by the COP decisions;</li> <li>▪ Raises general awareness and knowledge on climate change and related issues;</li> <li>▪ Strengthens the dialogue, information exchange and co-operation among all the relevant stockholders including governmental, non-governmental, academic, private sectors on climate change and related issues;</li> <li>▪ Mobilizes resources for implementation of the UNFCCC;</li> <li>▪ Designs and implements projects related to the implementation of the UNFCCC;</li> </ul>	<ul style="list-style-type: none"> <li>▪ Main institution <b>responsible</b> for climate change and related issues in the Republic of Egypt.</li> <li>▪ CCU is responsible for the <b>coordination</b> of stocktaking and <b>preparation</b> of the final stocktaking report and the Project Proposal for the Egypt's Second National Communication to the UNFCCC;</li> <li>▪ Potential for coordination of SNC project.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The CCU <b>led</b> and <b>coordinated</b> the stocktaking exercise;</li> <li>▪ The CCU <b>synthesized</b> thematic area specific reports into the core stocktaking report.</li> <li>▪ The CCU held <b>consultations</b> with all national climate change relevant stockholders in the country;</li> <li>▪ The CCU got <b>technical guidance</b> from UNDP-GEF NCSU and <b>exchanged experience</b> with homologue offices/colleagues from East Europe and CIS countries who were to develop stocktaking exercises;</li> </ul>
<b>MINISTRY OF AGRICULTURE &amp; LAND RECLAMATION (MALR)</b>	<b>Ministry in general</b>	<p>MALR is the main specialized governmental body responsible for agriculture and food policy in the Republic of Egypt. Responsibilities of MALR and its directorates and institutions that are relevant to the climate change are as following:</p> <ul style="list-style-type: none"> <li>▪ Drafts and implements governmental policies, strategies and action plans for development of agriculture and food sector by aiming at: (i) increasing agricultural, livestock, agro-industrial, fishery production; (ii) improvement of market infrastructure; (iii) sustainable management of natural resources;</li> <li>▪ Set standards and propose policies and measures to ensure the improvement of food safety, and protect consumers;</li> <li>▪ Design agro-food policies that will be oriented towards the coordination of agriculture sector development with the regional one, by highlighting integrated rural development;</li> <li>▪ Design national policies for irrigation and drainage;</li> <li>▪ Drafts laws, by-laws and decisions for development of agriculture and food sector and achievement of the above aims;</li> <li>▪ Follows-up the implementation of laws, by-laws and decisions of the Council of Ministers for development of agriculture and food sector;</li> <li>▪ Develop institutional capacities, capable to design and implement agricultural policies oriented towards the regional and European integration of Egypt's agriculture and food sector;</li> <li>▪ Coordinates the cooperation between relevant Ministries, local government, research institutions, and NGOs regarding the development of Agriculture and Food.</li> </ul>	<ul style="list-style-type: none"> <li>▪ MALR is represented in the <b>PSC</b>;</li> <li>▪ Provides <b>policy advise</b> regarding the development of the LUCF and agriculture and livestock sector and related GHG mitigation and adaptation strategies;</li> <li>▪ Potential <b>data</b> provider on LUCF and Agriculture and Livestock;</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Consulted</b> by CCU regarding the data provision for LUCF and Agriculture and Livestock.</li> <li>▪ Information of the <b>stock of activities / studies</b> related to the SNC provided.</li> <li>▪ <b>Feedback</b> on stocktaking report provided;</li> </ul>

Institution	Department	Responsibility / Field of Activities	Relevance to Climate Change/ reasons for inclusion	Role in the self assessment process
<b>MINISTRY OF WATER RESOURCES &amp; IRRIGATION (MWRI)</b>	<b>Ministry in general</b>	<p>MWRI is the main specialized governmental body responsible for Water resources &amp; Irrigation in Egypt. Responsibilities of MWRI and its directorates and institutions that are relevant to the climate change are as following:</p> <ul style="list-style-type: none"> <li>▪ Drafts and implements governmental policies, strategies and action plans for development of water resources &amp; irrigation sector by aiming at: (i) planning water consumptions; (ii) planning the irrigation processes during different seasons; (iii) Accredited the water requirements for different crops in different geographic regions;</li> <li>▪ Set standards and propose policies and measures to ensure the improvement of water safety &amp; cleaning;</li> <li>▪ Design water resources policies that will be oriented towards the conservation of water amounts;</li> <li>▪ Design national policies for irrigation and drainage;</li> <li>▪ Drafts laws, by-laws and decisions for development of water resources and irrigation sector and achievement of the above aims;</li> <li>▪ Develop institutional capacities, capable to design and implement water resource policies oriented towards the regional and Nile Basin integration with Egypt;</li> <li>▪ Coordinates the cooperation between relevant Ministries, local government, research institutions, and NGOs regarding orienting &amp; decreasing water consumptions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ MWRI will be represented in the <b>PSC</b>;</li> <li>▪ To provide <b>policy advise</b> regarding the development of water resources &amp; irrigation sector in relation to Climate change projections;</li> <li>▪ Potential <b>data</b> provider on GHG emissions from wetlands &amp; irrigated fields.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Consulted</b> by CCU regarding the data provision for GHG emissions from wetlands and lakes.</li> <li>▪ Information of the <b>stock of activities / studies</b> related to the SNC will be provided.</li> <li>▪ <b>Feedback</b> on stocktaking report will be provided;</li> </ul>
<b>MINISTRY OF FOREIGN TRADE AND INDUSTRY (MFTI)</b>	<b>Ministry in general</b>	<p><i>MFTI is the highest governmental authority responsible for energy and industry policy-making in the republic of Egypt. Responsibilities of MFTI and its directorates and institutions that are under its responsibility and relevant to the climate change are as following:</i></p> <ul style="list-style-type: none"> <li>• Designs, revises and regularly updates national strategies for sustainable development of energy and industry sectors;</li> <li>• Drafts the respective legal framework for the development of the energy and industry sectors;</li> <li>• Forecasts the continuous demand for different energy sources;</li> <li>• Promotes private investments, domestic or foreign ones, in both energy and industry sector by creating an attractive environment climate for these investments;</li> <li>• Boosts market reforms in the energy and industry sector to achieve the national objectives for their integration under EU structures;</li> <li>• Supervises and facilitates the merging of energy and industry public companies towards privatization process.</li> </ul>	<ul style="list-style-type: none"> <li>▪ MFTI is represented in the <b>PSC</b></li> <li>▪ Provides <b>policy advise</b> regarding the development of the Energy and Industry sector and related GHG mitigation and adaptation strategies for these sectors;</li> <li>▪ Significant <b>data</b> provider for Energy and Industry category;</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Consulted</b> by CCU regarding the data provision for Energy and Industry</li> <li>▪ Information of the <b>stock of activities / studies</b> related to the SNC provided.</li> <li>▪ <b>Feedback</b> on stocktaking report provided;</li> </ul>

Institution	Department	Responsibility / Field of Activities	Relevance to Climate Change/ reasons for inclusion	Role in the self assessment process
	<b>Supreme Council Of Energy (SCE)</b>	<p><i>SCE advises the Government, Minister of Energy and other ministries and public institutions on energy issues.</i></p> <ul style="list-style-type: none"> <li>▪ Designs National Policy and Strategies for the Development of the Energy Sector and propose Actions for their implementation;</li> <li>▪ Designs Laws and by-Laws for development of Energy sector;</li> <li>▪ Prepares different development scenarios and carries out analyses in energy field (including energy efficiency) with the goal of orienting the Egypt's economy towards a sustainable development of energy sector.</li> <li>▪ Supervises the implementation process of the National Energy Strategy.</li> <li>▪ Gathers, assembles and analyzes data on production, supply and consumption of energy sources in all economic sectors by creating a database according to International Agency of Energy (IAE) and EUROSTAT standards.</li> <li>▪ Develops annual energy balance of the country according to IAE and EUROSTAT formats.</li> <li>▪ Forecasts and proposes action plans for rational and efficient use of energetic fuels in different economic sectors.</li> <li>▪ Carries out studies for promotion of using of renewable energy sources.</li> <li>▪ Prepares in cooperation with other institutions, the environment standards related to exploitation of energy sources.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The <b>Team Leader</b> role of GHG inventory and <b>technical expertise</b> on GHG mitigation analysis are provided by the <b>SCE</b>;</li> <li>▪ The NAE is the main <b>data</b> provider for energy sector, mainly from energy balance</li> <li>▪ <b>SCE</b> is represented in <b>PSC</b>;</li> </ul>	<ul style="list-style-type: none"> <li>▪ The SCE has <b>drafted the report on GHG inventories</b> – as significant part of the core stocktaking report;</li> <li>▪ The SCE has <b>drafted the sections of the V&amp;A report</b> related to the impact of CC into the <b>energy sector</b> and response adaptation measures;</li> <li>▪ The <b>SCE</b> is <b>consulted</b> on issues related to GHG inventories, GHG mitigation analysis; related activity data for GHG inventory (energy);</li> <li>▪ The SCE has provided information of the <b>stock of activities / studies</b> related to the SNC;</li> <li>▪ <b>Feedback and validation</b> of the stocktaking report is provided by <b>SCE</b>.</li> </ul>
<b>MINISTRY OF TRANSPORT (MT)</b>	<b>Ministry in general</b>	<ul style="list-style-type: none"> <li>▪ Designs national policies for sustainable development of the transport and telecommunication sector through expanding and enhancing the transport infrastructure;</li> <li>▪ Designs transport master plans for each mode of transport (road, maritime, air);</li> <li>▪ Designs and implements measures for commercialization of services into the overall infrastructure network;</li> <li>▪ Designs and implements measures for rehabilitation of road network;</li> <li>▪ Designs the legal and institutional framework that would help the implementation of the polices and measures to the transport and telecommunication;</li> </ul>	<ul style="list-style-type: none"> <li>▪ Potential <b>member of PSC</b>;</li> <li>▪ Potential <b>data</b> provider for transport category;</li> <li>▪ Provides <b>policy advice</b> for the development of transport and for integrated assessment of impact of expected climate changes into these sector;</li> </ul>	<ul style="list-style-type: none"> <li>▪ MOTT is <b>consulted</b> by CCU regarding to the transport sector;</li> <li>▪ Information of the <b>stock of activities / studies</b> related to the SNC provided.</li> </ul>
<b>MINISTRY OF HEALTH and POPULATION (MOHP)</b>	<b>Ministry in general</b>	<p><i>MOHP is the highest governmental authority responsible for health policy-making in the republic of Egypt. Responsibilities of MOHP and its institutions that are under its responsibility and relevant to the climate change are as following:</i></p> <ul style="list-style-type: none"> <li>▪ Designs national polices for the protection of the public health and improvement of public health services</li> <li>▪ Designs the respective legal framework and build institutional</li> <li>▪ Implements policies, laws and regulations for the protection of the public health and health service;</li> </ul>	<ul style="list-style-type: none"> <li>▪ MOHP is represented in the <b>PSC</b>;</li> <li>▪ Provides <b>policy advise</b> regarding the development of Health sector and related impact of climate change and adaptation strategy for this sectors;</li> <li>▪ Potential <b>data</b> provider for health sector</li> </ul>	<ul style="list-style-type: none"> <li>▪ MOHP is <b>consulted</b> by CCU regarding the health sector;</li> <li>▪ Information of the <b>stock of activities / studies</b> related to the SNC provided.</li> <li>▪ <b>Feedback</b> on stocktaking report provided;</li> </ul>

Institution	Department	Responsibility / Field of Activities	Relevance to Climate Change/ reasons for inclusion	Role in the self assessment process
<b>MINISTRY OF PETROLEUM</b>	<b>Ministry in general</b>	<ul style="list-style-type: none"> <li>▪ Increasing Egypt's reserves of crude oil and natural gas Creating constant sufficiency in Egypt's consumption of crude oil and natural gas in their varied forms.</li> <li>▪ To make the petroleum sector a major contributor to Egypt's national economy and a principal source of employment for Egypt's large and skilled work force. Protect Egypt's resplendent environment and its varied ecological systems through the enactment and implementation of stringent national and international environmental protection laws to govern petroleum operations.</li> <li>▪ Curb Pollution through the increased use of environmentally friendly fuels such as natural gas and low-sulphur petroleum products that are produced in accordance with international specifications.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provides the main source of anthropogenic fuel, which is the source for GHG emissions.</li> <li>▪ Contributes in the process of fuel switching from fluid fuel to natural gas fuel.</li> </ul>	<ul style="list-style-type: none"> <li>▪ It is <b>consulted</b> by CCU regarding the health sector;</li> <li>▪ Information of the <b>stock of activities / studies</b> related to the SNC provided.</li> <li>▪ <b>Feedback</b> on stocktaking report provided;</li> </ul>
<b>MINISTRY OF ELECTRICITY AND ENERGY</b>		<ul style="list-style-type: none"> <li>• Optimize use of available energy sources and minimize environment pollution in the field of electricity generation and supply</li> <li>• Expand utilization of new and renewable energy resources</li> <li>• Provide electricity with minimum price and best quality</li> <li>• Set and Implement general policies in the fields of electricity generation, transmission and distribution to use the most technical and scientific proven developments and technologies.</li> <li>• Follow up and monitor different activities to provide electrical power for the social and economic development to support the government's framework and plans.</li> <li>• Suggest tariff of electrical power to the cabinet</li> <li>• Supervise study and implementation of important electrical projects</li> <li>• Set data structure and technical statistics of electric activities</li> </ul>	<ul style="list-style-type: none"> <li>▪ One of the main contributors to GHG emissions in Egypt.</li> <li>▪ Implements important projects for climate change mitigation in the fields of renewable energies &amp; energy efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>▪ It is <b>consulted</b> by CCU regarding the health sector;</li> <li>▪ Information of the <b>stock of activities / studies</b> related to the SNC provided.</li> <li>▪ <b>Feedback</b> on stocktaking report provided;</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>PUBLIC ACADEMIA &amp; RESEARCH INSTITUTES</b></li> </ul>				
<b>CAIRO UNIVERSITY</b>	<b>Faculty of Science (FSc) , Meteorology &amp; Astronomy Department</b>	<ul style="list-style-type: none"> <li>▪ Provides education at all levels on Meteorology &amp; Climatology, Chemistry, Physics, Biology, Computing Science and Mathematics.</li> <li>▪ Conducts scientific research and implements projects on Meteorology &amp; Climatology, Chemistry, Physics, Biology, Computing Science, and Mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>▪ FSc is represented in <b>PSC</b></li> <li>▪ FSc is a potential provider of the <b>technical expertise</b> for Meteorological forecasts, climatological researches</li> </ul>	<ul style="list-style-type: none"> <li>▪ FSc is <b>consulted</b> by CCU on genera technical issues;</li> </ul>
<b>ALAZHAR UNIVERSITY</b>	<b>Faculty of Science , Meteorology &amp; Astronomy Department</b>	<ul style="list-style-type: none"> <li>▪ Provides education at all levels on Meteorology &amp; Climatology, Chemistry, Physics, Biology, Computing Science and Mathematics.</li> <li>▪ Conducts scientific research and implements projects on Meteorology &amp; Climatology, Chemistry, Physics, Biology, Computing Science, and Mathematics.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Physics department provides <b>technical expertise</b> on uncertainty assessment for GHG inventory.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Physics department is <b>consulted</b> by CCU related to the issue of uncertainty assessment;</li> <li>▪ <b>Feedback</b> and <b>validation</b> of the stocktaking report is provided by IHM;</li> </ul>
<b>AIN SHAMS UNIVERSITY</b>	<b>Institute of Environment (IE)</b>	<ul style="list-style-type: none"> <li>• Provides Education at all levels on topics related to Environmental sciences, Media, Agro- Climatology.</li> <li>• Conducts scientific research &amp; implements projects on Agro- Climatology, Public Awareness, Environmental protection &amp; mass media.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provides advice regarding the development of Public Awareness &amp; impacts of Climate Change on different sectors.</li> </ul>	<ul style="list-style-type: none"> <li>▪ IE is consulted by CCU regarding the public awareness</li> <li>▪ Information of the stock of activities related to the SNC provided.</li> </ul>

Institution	Department	Responsibility / Field of Activities	Relevance to Climate Change/ reasons for inclusion	Role in the self assessment process
<b>National Research Center (NRC)</b>	- <b>Environmental &amp; Occupational Medicine Department</b>  - <b>Medical Physiology Department</b>	<ul style="list-style-type: none"> <li>▪ Conducts scientific research &amp; implements projects related to Climate change and its health Impact among the different sectors of the population.</li> <li>▪ Conducts scientific research &amp; implements projects on Public Awareness, Environmental protection &amp; mass media.</li> <li>▪ Design and Implement activities that raise awareness of public on environmental issues.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Assess the impacts of Climate Change on the health of the different sectors</li> <li>▪ Provides advice regarding the development of Public Awareness</li> </ul>	<ul style="list-style-type: none"> <li>▪ NRC is consulted by CCU regarding information of the stock of activities related to the SNC provided and the public awareness.</li> </ul>
<b>Egyptian Meteorological Authority (EMA)</b>	<b>Climatology</b>	<ul style="list-style-type: none"> <li>▪ Systematically observes and monitors meteorological parameters from all national stations;</li> <li>▪ Process the data and information received from the observations;</li> <li>▪ Develop data base and information system on the metrological indicators of the country;</li> <li>▪ Develops weather forecast and provide it to the interested parties;</li> <li>▪ Report data to the World Meteorological Organization and to other regional / sub-regional networks established;</li> </ul>	<ul style="list-style-type: none"> <li>▪ The <b>Team Leader</b> role of V&amp;A and significant <b>technical expertise</b> on V&amp;A are supported by the EMA</li> <li>▪ The EMA is the main <b>Metrological data</b> provider;</li> </ul>	<ul style="list-style-type: none"> <li>▪ The EMA is <b>consulted</b> on issues related to V&amp;A and related data</li> <li>▪ EMA has provided information of the <b>stock of activities / studies</b> related to the SNC;</li> <li>▪ <b>Feedback</b> and <b>validation</b> of the stocktaking report is provided by EMA</li> </ul>
<b>Agricultural Research Center (ARC)</b>	* <b>Institute of Soil, Water , &amp; Environment</b> * <b>Central Laboratory for Agricultural Climate (CLAC)</b>	<ul style="list-style-type: none"> <li>▪ Conducts scientific research &amp; implements projects related to Climatology , Agro-Climatology &amp; Agro- meteorology</li> <li>▪ Researches in Climate Change impacts , vulnerability &amp; Adaptation in Agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provides technical expertise for GHG inventory &amp; GHG mitigation analysis</li> <li>▪ Technical expertise on uncertainty assessment for GHG inventory</li> </ul>	<ul style="list-style-type: none"> <li>▪ ARC is consulted by CCU on general issues related to Agro- meteorology.</li> </ul>
<b>National Water Research Center (NWRC)</b>		<ul style="list-style-type: none"> <li>▪ Starting to conduct scientific research on topics related to water resources and analysis of rainfall over Ethiopian plateau.</li> <li>▪ Research work plans on Climate Change impacts on water availability.</li> <li>▪ Researches on evaporation from reservoirs &amp; Nile branches and studies on distribution of rainfall over Equatorial plateau.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provides technical expertise for impacts of climate changes on water resources.</li> <li>▪ Technical expertise on projections of water consumption in relation to coming climatic changes.</li> </ul>	<ul style="list-style-type: none"> <li>▪ NWRC is consulted by CCU on general issues related to water resources.</li> </ul>

Institution	Department	Responsibility / Field of Activities	Relevance to Climate Change/ reasons for inclusion	Role in the self assessment process
<b>Tebbin Institute for Metallurgical Studies (TIMS)</b>		<ul style="list-style-type: none"> <li>▪ Tebbin Institute for Metallurgical Studies started its activities in November 1968 as a scientific establishment for continuous engineering education, training, research and industrial consultation Under the Presidential Decree no. 1330/ 1975, issued on 31 December 1975. Currently it accomplishes these activities for the Ministry of Foreign Trade and Industry.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Center of energy efficiency in Industry, 1983 to 1987, 400 thousands US\$, UNDP.</li> <li>▪ Project of energy efficiency in metallurgical and glass industries, 1985 to 1988, 900 thousands US\$, UNDP</li> <li>▪ Energy efficiency and environment protection project (ECEP), 1989 to 1998, 67.5 Million US\$, USAID and 70 Million LE Egypt's Government contribution.</li> <li>▪ National Strategy Study for CDM, 160 thousands US\$, World Bank, 2000 to 2002.</li> <li>▪ Capacity Development for Clean development Mechanism (CD for CDM) project 300 thousands US\$, UNEP, 2003 to present.</li> </ul>	<ul style="list-style-type: none"> <li>▪</li> </ul>
<b>Organization for Energy Planning (OEP)</b>		<ul style="list-style-type: none"> <li>▪ Provide technical support to the Supreme Council Of Energy.</li> <li>▪ Collect and analyze energy data at the national level.</li> <li>▪ Perform integrated energy policy planning within the economic framework.</li> <li>▪ Develop technical expertise in various energy fields.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Improve the efficiency of energy use in the national economy.</li> <li>▪ Provide technical consultation in the field of energy to all levels of decision makers.</li> <li>▪ Enhance public awareness of the significant role played by energy in the national economy.</li> </ul>	<ul style="list-style-type: none"> <li>▪</li> </ul>
<b>Non-Governmental Organizations (NGOs)</b>				
<b>Health and Environmental Education Association (HEEA)</b>		<ul style="list-style-type: none"> <li>• HEEA is a well-known NGO in the field of raising awareness of public on environmental issues.</li> <li>• Promotes sustainable development in the country through changing the attitude and practices of the public towards alternative energy options.</li> <li>• Provides technical expertise for implementation in the field of environmental protection and safety.</li> </ul>	<ul style="list-style-type: none"> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪</li> </ul>
<b>Medical Women Association (MWA)</b>		<ul style="list-style-type: none"> <li>▪ MWA is well-known NGO in the field of raising awareness of public on the health and social problems.</li> <li>▪ Provides technical expertise for implementation in the field of changing of the attitude and behaviors among different socioeconomic status</li> </ul>	<ul style="list-style-type: none"> <li>▪</li> </ul>	<ul style="list-style-type: none"> <li>▪</li> </ul>
<b>INTERNATIONAL ORGANIZATIONS BASED IN EGYPT</b>				

Institution	Department	Responsibility / Field of Activities	Relevance to Climate Change/ reasons for inclusion	Role in the self assessment process
<b>UNDP EGYPT</b>		<p>UNDP Egypt is uniquely placed to advise the government on policies and institutions to meet development challenges, to work with partners to mobilize talent and resources, and to play the advocacy role through the Human Development Report and the Millennium Development Goals (MDGs). UNDP is helping Egypt integrate the Millennium Development Goals into national development frameworks. These global goals, each to be achieved by 2015, reflect many of the priorities already identified by the Egyptian NSSD (an expanded Growth and Poverty Reduction Strategy).</p> <p>The programs and projects within the unit are clustered around three main MD goals: Poverty, Gender and Environment, although many crosscutting elements and initiatives are present. In this context:</p> <ul style="list-style-type: none"> <li>▪ Poverty is related and addressed through improvements of personal and community security levels.</li> <li>▪ Gender is an overall crosscutting issue, which reflects its impact within cluster programs and extends to all other clusters from policy formulation to application.</li> <li>▪ Environment is directly linked to poverty reduction and improvement of livelihoods, thus an additional crosscutting area.</li> </ul>	<ul style="list-style-type: none"> <li>▪ UNDP holds the capacity of the <b>Implementing Agency</b> of all GEF funded Projects;</li> <li>▪ UNDP is represented in <b>PSC</b>;</li> <li>▪ UNDP provides <b>technical support</b> to the implementation process of the project;</li> </ul>	<ul style="list-style-type: none"> <li>▪ UNDP is systematically <b>consulted</b> by CCU in all steps of the stocktaking exercise;</li> <li>▪ <b>Feedback</b> and <b>validation</b> of the stocktaking report is provided by UNDP Egypt</li> </ul>
<b>WORLD BANK (WB)</b>		<p>The WB is helping Egypt achieve social and economic development by providing the country with loans and grants to finance development projects. In addition, the WB is supporting the country's growth through the provision of technical assistance, as well as analytical and policy advice. In partnership with the EU, the WB has facilitated donor coordination efforts and helped to catalyze additional resources to support Egypt's development.</p> <p>The WB's Country Assistance Strategy for Egypt for the period 2002-2005 focuses on reducing poverty and supports the Egyptian Government's NSSD. The WB is working closely with the Egypt's Government to achieve the priorities set in their strategy. The main priorities envisaged in the WB's strategy are to improve governance and strengthen institutions, promote sustainable private sector growth, and foster human development.</p>	<ul style="list-style-type: none"> <li>▪ WB has implemented and <b>implements projects</b> related to the management of natural resources including <b>forests</b> which are a significant source of data and information to be considered under the SNC;</li> <li>▪ WB is a potential innovative <b>financing mechanism</b> for carbon sequestration through its Prototype Carbon Fund (<b>PCF</b>) and other similar funds;</li> <li>▪ WB has recently approached the CCU to participate into the <b>Natural Resources Management Project</b>, under PCF component.</li> </ul>	<ul style="list-style-type: none"> <li>▪ WB is <b>consulted</b> by CCU regarding stocktaking</li> </ul>
<b>PROJECTS</b>				
<b>GEF Small Grants Program (SGP)</b>		<p><i>The GEF Small Grants Program is a corporate Program of the GEF, implemented by UNDP and executed by UNOPS.</i></p> <ul style="list-style-type: none"> <li>▪ The GEF's Small Grants Program aims to deliver global environmental benefits in the GEF Focal Areas of biodiversity conservation, climate change mitigation, protection of international waters, prevention of land degradation (primarily desertification and deforestation), and elimination of persistent organic pollutants through community-based approaches;</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Collaborator</b> regarding the projects on energy and climate change;</li> <li>▪ Potential <b>data provider</b> from relevant projects as this program has funded some projects (finalized / ongoing) in energy efficiency and renewable energy sources.</li> </ul>	<ul style="list-style-type: none"> <li>▪ GEF SGP is <b>consulted</b> by CCU regarding stocktaking;</li> <li>▪ Information of the <b>stock of activities / studies</b> related to the SNC provided.</li> <li>▪ <b>Feedback</b> on stocktaking report provided;</li> </ul>

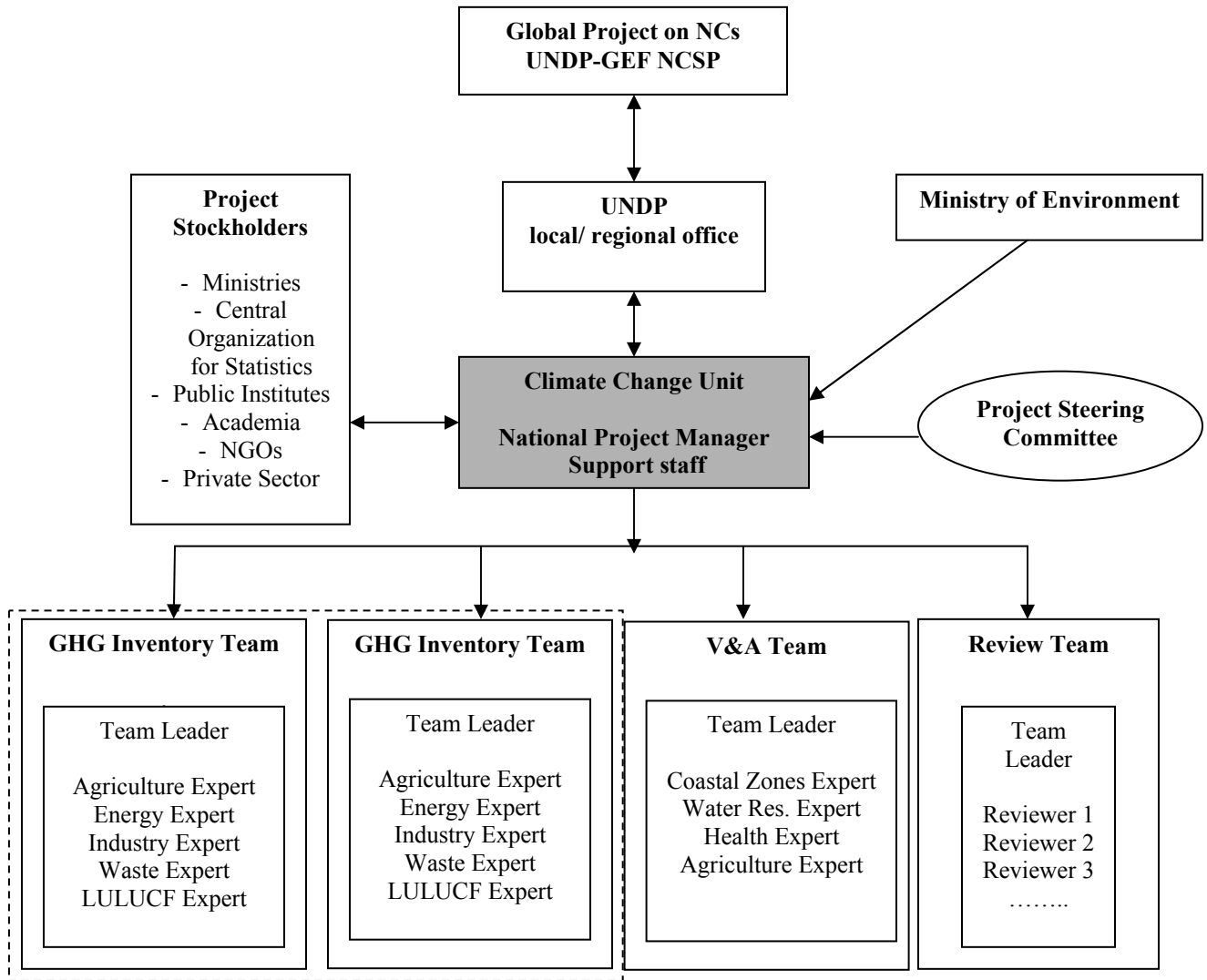
Institution	Department	Responsibility / Field of Activities	Relevance to Climate Change/ reasons for inclusion	Role in the self assessment process
<b>Nile Basin Initiative (NBI)</b>		<ul style="list-style-type: none"> <li>▪ <i>The GEF's mission is</i> the protection of the global environment. The Global Environment Facility forges international cooperation and finances actions to address six critical threats to the global environment: biodiversity loss, climate change, degradation of international waters, ozone depletion, land degradation, and persistent organic pollutants (POPs).</li> <li>▪ <i>The Nile Basin Initiative is</i> supported by contributions from the NBI countries themselves and through the generous support of several multilateral and bilateral donors.</li> <li>▪ <i>A World Bank–managed,</i> multi-donor trust fund was established as proposed by the Nile Council of Ministers as the preferred initial funding mechanism</li> </ul>	<ul style="list-style-type: none"> <li>▪ The project has developed some work on the vulnerability of the arid land selected areas to the climate change and hereby a potential <b>data provider</b>.</li> </ul>	<ul style="list-style-type: none"> <li>▪ NBI Project is <b>consulted</b> by CCU regarding stocktaking;</li> <li>▪ Information of the <b>stock of activities / studies</b> related to the SNC provided.</li> </ul>

**Appendix E: Key source categories (1990)**

<b>Nr.</b>	<b>Key Source Categories, 1990</b>	<b>Gas</b>	<b>Level assessment CO<sub>2</sub> eqv. (%)</b>	<b>Cumulative total CO<sub>2</sub> eqv. (%)</b>
1	Enteric Fermentation	CH <sub>4</sub>	27.32%	27.32%
2	Solid Waste Disposal on Land	CH <sub>4</sub>	22.32%	49.64%
3	Rice Cultivation	CH <sub>4</sub>	16.04%	65.68%
4	Oil and Natural Gas – Fugitive Emissions from Fuels	CH <sub>4</sub>	12.47%	78.15%
5	Traditional Biomass burned for Energy – Fuel Combustion	CH <sub>4</sub>	6.25%	84.40%
6	Energy Industries – Fuel Combustion	CO <sub>2</sub>	2.12%	86.52%
7	Manure Management	CH <sub>4</sub>	1.96%	88.49%
8	Agricultural Soils	N <sub>2</sub> O	1.79%	90.28%
9	Manufacturing Industries and Construction	CO <sub>2</sub>	1.78%	92.06%
10	Transport – Fuel Combustion	CO <sub>2</sub>	1.54%	93.60%
11	Transport – Fuel Combustion	CH <sub>4</sub>	0.90%	94.50%
12	Other Sectors – Fuel Combustion	CO <sub>2</sub>	0.85%	95.34%

*Key source categories for GHG emissions (year 1990) - Egypt*

**Appendix F: Institutional framework for the project**



## Appendix G: Terms of Reference (TOR)s

### 1. TOR for National Project Manager

In consultation with the Project Steering Committee (PSC), the Project Manager (PM) is responsible for day-to-day management, co-ordination and supervision of the implementation of the above project. Specifically, his/her responsibilities are but not limited to the following:

- Supervises and ensures the timely implementation of the project relevant activities as scheduled in the working plan
- Prepares a detailed work plan for the project and draft terms of reference for the subcontracts (in consultation with the PSC and UNDP);
- Compiles the scope and content of the overall SNC report and relevant sections in consultation with Team Leaders;
- Develops the scope of the work and TORs and other procurement documentation required to identify and facilitate recruitment of experts and consultants;
- Identifies and hire/subcontract the national experts and institutions (in consultation with the PSC and UNDP);
- Supervise project support staff national consultants who are recruited to provide technical assistance
- Organizes and supervise the workshops and training needed during the project;
- Liaises with the relevant ministries, national and international research institutes, NGOs, and other relevant institutions in order to involve their staff in project activities, and to gather and disseminate information relevant to the project;
- Prepares periodic progress reports of the project;
- Control the expenditures and otherwise ensure adequate management of the resources provided for the project;
- Summarizes and synthesizes the results of the project;
- Identifies the follow up activities and mobilizes other resources at the extend possible;
- Identifies and ensures synergy of the SNC with other relevant ongoing / new projects.
- Finalizes the Second National Communication of Egypt along with the government personnel and national experts;
- Ensures that the SNC process is in the line with guidance provided by the COP of the UNFCCC and contributes to the improvement of the UNFCCC reporting process.
- Oversees the maintenance and update of the Egypt's climate change web page;
- Collaborates with all relevant stockholders and the Project Steering Committee and other partners to ensure their involvement in the SNC

#### Qualifications and Experience

- Preferably Ph.D. degree in environment-related studies and other related disciplines;
- Good understanding of Egypt's environment/development issues as well as the three thematic areas under investigations;
- At least ten years experience relevant to the project;
- Excellent communication (Written and Oral) Skills;
- Demonstrated experience in project management;
- Expertise in putting together costed, results-oriented action plans;
- Demonstrated experience in working with government, donors and the United Nations system;
- Appropriate experience working with government structures at local levels, and working with NGOs and private sector;
- Substantial knowledge of methodologies for inventories (*IPCC Revised 1996 Guidelines and Good Practice Guidance, LEAP etc*)
- Substantial experience in Government and in inter-departmental procedures preferred

- Familiarity with international negotiations and processes under the UNFCCC preferred
- Familiarity with computers and word processing

#### Qualifications and experience

- An advanced degree (at least Ph.D. or equivalent) in energy, environmental management or other field relevant to the project
- A minimum of 7 years of working experience in the area relevant to the project;
- A demonstrated ability in managing projects, and in liaising and co-operating with all project personnel including government officials, scientific institutions, NGOs, and private sector;
- Fluency in the government official language (s);
- A very good knowledge in English is absolutely necessary.

## 2. TOR for National GHG Inventory Team Leader

The National GHG inventory Team Leader should work in consultation with and under the guidance and supervision of the National Project Manager. Specifically, his\her responsibilities are but not limited to the following:

- Assists the NPM in establishing the team of experts for performing the GHG inventory on the basis of the roster of experts;
- Oversees the training –of –trainers sessions on GHG inventory.
- Assists NPM to organize GHG inventory relevant training and workshops.
- Prepares a detailed work-plan for GHG inventory exercise on the basis of the overall project work plan.
- Provides periodic progress report to the NPM on the GHG inventory thematic area;
- Develops the scope of work and respective terms of reference for the team members;
- Leads the data collection process, including surveys.
- Leads and oversees the team to conduct the GHGs national inventory;
- Ensures synergy with Regional Project on GHG inventories;
- Ensure the timely and effective management of the activities as scheduled;
- In consultation with NPM select and implement the methodologies for the conducting of GHGs inventory;
- Identifies gaps and key sectors for GHGs inventory;
- Incorporates comments received from the review process.
- Drafts the National Inventory Report and respective chapter of Egypt’s SNC along with the respective part of executive summary.
- Leads and coordinates the updating the Manual of Procedures in the light of the new findings under the SNC exercise.
- Archives new data and estimates of new inventory.

### Qualifications and experience

- A Ph.D. degree in energy, environmental management or other field relevant to the project;
- A minimum of 10 years of working experience in the area relevant to the Climate Change;
- Good understanding of GHGs inventory process and demonstrable knowledge of IPCC and GPG;
- Demonstrated ability of analytical and drafting work;
- Familiarity with computers and word processing (EXCEL; ACCESS)
- Fluency in English;

### **3. TOR for GHG Abatement Analysis Team Leader**

The team leader of scenarios development sector should work in consultation with and under the guidance and supervision of the National Project Manager. Specifically, his\her responsibilities are but not limited to the following:

- Assists the NPM in establishing the team of experts for performing the GHG abatement analysis on the basis of the roster of experts;
- Prepares a detailed work-plan for GHG abatement analysis on the basis of the overall project work plan.
- Provides periodic progress report to the NPM on the GHG abatement analysis thematic area
- Develops the scope of work and respective terms of reference for the team members;
- Leads the data and information collection process.
- In consultation with NPM decide on methodologies for the elaboration of scenarios for sectors than energy;
- Leads and oversees the scenario development and update
- Organize the scheduled consultations/workshops and ensure their success;
- Ensures synergy with other relevant projects;
- Ensure the timely and effective management of the activities as scheduled;
- Incorporates comments received from the review process.
- Drafts the GHG Abatement Analysis Report and respective chapter of Egypt's SNC along with the respective part of executive summary.
- Oversees the documentation of the studies made and archiving.

#### Qualifications and experience

- A Ph.D. degree in energy, environmental management or other field relevant to the project;
- A minimum of 10 years of working experience in the area relevant to the Climate Change;
- Good understanding of GHGs inventory process and projection;
- Demonstrable knowledge of IPCC 1996, IPCC GPG, LEAP etc.
- Demonstrated ability of analytical and drafting work;
- Familiarity with computers and word processing;
- Fluency in English;

#### **4. TOR for V&A Team Leader**

The Vulnerability and Adaptation sector team leader should work in consultation with and under the guidance and supervision of the National Project Manager. Specifically, his/her responsibilities are but not limited to the following:

- Assists the NPM in establishing the team of experts for performing the V&A on the basis of the roster of experts;
- Prepares a detailed work-plan for V&A on the basis of the overall project work plan.
- Provides periodic progress report to the NPM on the V&A thematic area
- Develops the scope of work and respective terms of reference for the team members;
- Leads the data and information collection process for performing the V&A study.
- In consultation with NPM decide on approaches (not concluded under stocktaking phase) to be used if necessary;
- Leads and oversees the development baseline climate and socio-economic scenario and impact of climate change.
- Organize the scheduled consultations/workshops and ensure their success;
- Ensures synergy with other relevant projects
- Ensure the timely and effective management of the activities as scheduled;
- Incorporates comments received from the review process.
- Drafts the V&A Report and respective chapter of Egypt's SNC along with the respective part of executive summary.
- Oversees the documentation of the studies made and archiving.

#### Qualifications and experience

- A Ph.D. degree in energy, environmental management or other field relevant to the project;
- A minimum of 10 years of working experience in the area relevant to the Climate Change;
- Good understanding of climate change and sustainable development issues;
- Demonstrated ability of analytical and drafting work;
- Demonstrable knowledge of IPCC 1994, MAGIC / SCHENGEN etc.
- Familiarity with computers and word processing;
- Fluency in English;

## 5. TOR for Project Steering Committee

In order to ensure a successful implementation of these UNDP-GEF climate change projects, the Ministry of Environment of Egypt as the Executing Agency of these Projects has agreed on establishment of a Project Steering Committee (PSC), being chaired by the National Project Director and composed of senior officials from the relevant ministries, research institutes, UNDP, NGOs and academia.

The duties, responsibilities and operating rules of the above PSC are as following:

- Provides assistance and political support to the National Project Director, National Project Manager and national experts and counterparts during the implementation process of all project activities.
- Reviews and make necessary comments for the all draft documents prepared by the national climate change team
- Receives information on regular basis on the status of the implementation of the project activities and problems to be faced with. National Project Manager submits the report on the status of the implementation of project activities.

Rules under which PSC operates:

- NPM serves as Moderator of PSC meetings. NPD chairs the PSC meetings
- PSC meets not less than three times during the project life-time. In special cases the PSC shall meet upon the initiative of the National Project Director.
- When the PSC does not meet, the NPD and NPM may request inputs and support from individual members of the PSC.

In principle, the NSC shall operate on the basis of consensus. If consensus cannot be reached, then the case under discussion might put to a vote. Voting is performed through secret balloting.

**Appendix H: Endorsement letter from UNFCCC Focal Point**

*Arab Republic of Egypt  
Cabinet of Ministries  
Ministry of State for Environmental Affairs  
Egyptian Environmental Affairs Agency*

جمهورية مصر العربية  
رئاسة مجلس الوزراء  
وزارة الدولة لشئون البيئة  
جهاز شئون البيئة

**Date: 28 August 2005**

To: Mr. Antonio Vigilante  
Resident Representative  
UNDP/Egypt

**1191 Cornish El-Nil. World Trade Center Building. Boulac, Cairo, Egypt.**

Dear *Sir*,

**Re: Project proposal for the preparation of Egypt's Second National Communication to the United Nations Convention on Climate Change**

On behalf of the Government of Egypt and, in my capacity as GEF Operational Focal Point, I hereby endorse the request of funding from the Global Environment Facility for the above mentioned project proposal, to be presented through the United Nations Development Programme.

In doing so, I express my agreement with the content of the project proposal and with its implementation arrangements.

We look forward to your kind consideration in this matter.

Sincerely,

*Dr.Eng. El-Sayed Sabry Mansour  
UNFCCC Focal Point  
Egyptian Environmental Affairs Agency (EEAA)  
Ministry of State for Environmental Affairs (MSEA)  
Egypt*

Appendix I: Endorsement letter from GEF OFF

*Arab Republic of Egypt  
Cabinet of Ministries  
Ministry of State for Environmental Affairs  
Egyptian Environmental Affairs Agency*

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رئاسة مجلس الوزراء  
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On behalf of the Government of Egypt and, in my capacity as GEF Operational Focal Point, I hereby endorse the request of funding from the Global Environment Facility for the above mentioned project proposal, to be presented through the United Nations Development Programme.

In doing so, I express my agreement with the content of the project proposal and with its implementation arrangements.

We look forward to your kind consideration in this matter.

Sincerely,

*Dr. Mohamed Sayed Khalil*  
GEF Operational Focal Point  
CEO of EEAA  
Egypt

