GLOBAL ENVIRONMENT FACILITY

MOHAMED T. EL-ASHRY
CHIEF EXECUTIVE OFFICER
AND CHAIRMAN

July 1, 1996

Dear Council Member:

UNDP, as the Implementing Agency for *Tunisia - Emissions Inventory of Greenhouse Gases, National Strategy and Action Plans for Emissions Reduction, Sea Level Rise Vulnerability Assessment, and Fulfillment of National Communications under the UNFCCC,* has submitted the attached proposed project document for CEO endorsement prior to final approval of the project document in accordance with UNDP procedures

Over the next four weeks, the Secretariat will be reviewing the project document to ascertain that it is consistent with the proposal included in the work program approved by the Council in May 1995, and with GEF policies and procedures. The Secretariat will also ascertain whether the proposed level of GEF financing is appropriate in light of the project's objectives.

If by July 29, 1996, I have not received requests from at least four Council Members to have the proposed project reviewed at a Council meeting because in the Member's view the project is not consistent with the Instrument or GEF policies and procedures, I will complete the Secretariat's assessment with a view to endorsing the proposed project document.

Sincerely,

Mohamed T. El-Ashry

cc: Alternates, Implementing Agencies, STAP

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UNITED NATIONS DEVELOPMENT PROGRAMME
GLOBAL ENVIRONMENTAL FACILITY

PROJECT DOCUMENT

NUMBER AND TITLE: **TUN/95/G31/B/1G/99** - Emissions Inventory of Greenhouse Gases, National Strategy and Action Plans for Emissions Reduction, Sea Level Rise Vulnerability Assessment, and Fulfillment of National Communications under the UNFCCC

DURATION: 30 months

COUNTRY: Tunisia

ACC CLASSIFICATION: 0300: Natural Resources
0350: Energy

PROJECT TYPE: Climate Change

GOVERNMENT IMPLEMENTING AGENCIES: Ministry of Environment and Land Management; Energy Conservation Agency

EXECUTING AGENCY: Government of Tunisia

ESTIMATED START-UP DATE: September 1996

GOVERNMENT INPUTS (IN-KIND): 270,000 TD

UNDP and Cost-Sharing Financing	
UNDP GEF:	$565,400
Government cost-sharing:	$100,000
Total:	$665,400

SUMMARY: This project will provide technical assistance and build capacity in Tunisia to respond to the UN Framework Convention on Climate Change (UNFCCC) through the development of a greenhouse gas (GHG) inventory, the assessment of GHG mitigation options, a study of the vulnerability of the Tunisian economy to sea level rise, the preparation of sectoral action plans, and national communications to the UNFCCC. Implementation of the project will involve enhancement of existing institutional networks, the training of personnel, establishment of policy dialogues through national workshops, project proposal development, development of new initiatives to address the threat of global climate change, and creation of local capacity and structures that will continue these activities beyond the duration of the project. The project will coordinate with the activities of the UNDP/GEF regional Maghreb capacity building project, and benefit from the lessons learned from other climate change studies regionally and globally. The project will establish cooperation with initiatives undertaken in conjunction with the UNFCCC Secretariat, such as CC:TRAIN, CC:FORUM and CC:INFO.

On behalf of:	**Signature:**	**Date:**
Government of Tunisia	_____	_____
UNDP	_____	_____

UN official exchange rate at date of last signature of project document:
$1 US = 0.957 Tunisian Dinars

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A. CONTEXT

A.1 Description Of The Country

Situated along the Mediterranean coast of North Africa, Tunisia possesses a diverse geography and economy, amid a fragile semi-arid environment. The Atlas Mountains in the north form a dry plateau that merges with fertile plains near the coast; in the south, below the Chott Djerid and other salt lakes, stretches the Sahara desert. Most of the country's 8.5 million people and $11 billion economy are concentrated along its irregular, 1300 km coastline, much of which is low-lying and thus susceptible to damage from accelerated sea level rise.

Less than 20% of Tunisia's 16.5 million hectares are considered fertile and highly suitable for agriculture; the remaining 80% are less fertile, marginal, or arid lands. While three millennia of agro-pastoral civilization have survived Tunisia's dry and drought-prone climate, characterized by violent winds and torrential rains, the pressures from growing population, inappropriate agricultural practices, water resource management, and other development activities are an increasing threat to its sustainability. At present, the equivalent of 19,000 hectares of productive land are lost annually to the combined effects of soil erosion, flooding, salinization, and desertification.

While agriculture remains the livelihood of one-third of its population and the source of 15% of GDP, oil production, manufacturing, services, and tourism are all important elements of the national economy. In the 1970s, an oil boom fueled rapid economic growth of 7-8% per year, enabling considerable state-sponsored investment in productive infrastructure. However, Tunisia's oil reserves proved limited. The economic importance of the petroleum sector subsequently declined, and continued growth in other sectors has enabled Tunisia to average 4% per year economic growth over the past 15 years.

Since the 1970s, a steady reduction in petroleum production combined with rapid growth in energy demand has turned the country from a net energy exporter to a net importer. Growth in commercial energy consumption averaged almost 8% per year in the 1970s and 1980s, slowing to 4% per year in recent years. Growth in energy intensity (Tonnes Oil Equivalent/$GNP) has been more modest, averaging 2.6% per year through the 1970s and 1980s, leveling off in recent years at around 460 TOE/Million 1990 Dinars in recent years, a level somewhat higher than the average of OECD countries today. Tunisia's relatively high energy intensity suggests the potential for continued rapid growth in energy consumption and for considerable energy savings.

Recognizing that continued economic growth will mean increasing reliance on imported energy resources, Tunisia has already committed itself to developing its indigenous renewable energy resources and to improving energy efficiency. Among renewable resources, solar energy appears most promising; currently, it provides 3% of final energy consumption in Tunisia. Three thousand photovoltaic systems have been installed, over 7000 m^2 of solar hot water heaters are in use, and several projects are underway to improve solar technology development and dissemination. Biomass energy resources represent 25% of current final consumption -- mostly used in the form of woodfuel and agricultural residues by rural households -- but the wood resource base is rather limited and already under considerable pressure, with demand for woodfuels exceeding available supply according to the Forestry Department. Hydro resources account for only 1-2% of electricity production and prospects for additional capacity are very limited.

Petroleum products remain the predominant source of energy consumed in Tunisia, accounting for 54% of total final consumption, and 36% of thermal electricity generation. Approximately half of this is produced in local refineries, the remainder imported. The use of natural gas is growing rapidly in Tunisia; it is presently the predominant fuel used for thermal electricity generation (64% in 1992) and its role in residential and industrial applications is growing quickly as the distribution network expands. Natural gas accounted for almost one-third of commercial primary energy consumption in 1994, and plans are to double consumption by the year 2000, relying heavily on imported gas from Algeria. Tunisia's gas reserves are limited, and current production capacity can only provide 10% of national demand. Tunisia has no significant proven coal reserves, and the use of coal products is limited to small amounts of coke for steel-making.

As described in the next section, Tunisia is committed to increasing its forest cover. In Roman times, forests covered 3 million hectares of what was then referred to as "green Tunisia". By the time of national independence in 1956, Tunisia inherited only 400,000 hectares of forest. Since then, reforestation efforts have increased total forested area to 630,000 hectares, but pressures on forest resources, particularly from woodfuel demands and rural livelihoods, present significant barriers to increasing biomass cover.

A.2 Host Country Strategy

Tunisia signed and ratified the UNFCCC on July 15, 1993 signifying its commitment to the global environment and principles of sustainable development. Indeed, Tunisia has made sustainable development one of its central national objectives, and has developed institutions and policies to ensure that environment protection is integrated into its development activities. Reflecting its commitments undertaken at the Earth Summit in 1992, Tunisia created a National Commission for Sustainable Development in 1993, which initiated national Agenda 21 activities in 1994. The Eighth Economic and Social Development Plan for 1992-1996 has gives further emphasis to the importance of environment protection in Tunisia, increasing dedicated environmental funding to $600 million from the approximately $250 million level in the previous plan.

Since the Rio Conference, Tunisia has issued State of the Environment reports on an annual basis, detailing its environmental protection strategies. The Ministry of Environment and Land Management is presently emphasizing three priority areas for ensuring sustainable development: fighting desertification; preserving water resources; and managing energy and the environment. Many specific policies and programs are being implemented in pursuit of these goals, including

- ***The national ten-year reforestation and pastoral land action program (1991-2000)***, which seeks to reforest 320,000 hectares between 1990 and 2000, and plant bushes on an additional 400,000 hectares of pastoral lands. The goal is to achieve forest cover on 15% of Tunisia's land area. The government has committed over 800 million Dinars over 10 years to this effort.
- ***The national action program for soil and water conservation (1991-2000),*** which includes 550 million Dinars of investment in watershed management and soil protection initiatives, such as fruit tree planting, traditional erosion control techniques (e.g. terracing), and aquifer recharge.
- ***The Energie 2010 action program*** to maintain the national energy balance, provide adequate energy resources for economic growth, and promote environmental protection. The program includes energy efficiency measures (from appliance labeling to urban

transport planning), renewable energy options (such as solar water heating, photovoltaic systems, and the use of olive pits as fuel), and woodfuel conservation strategies (improved wood stove dissemination and fuel substitution). The overall goal of Energie 2010 is the displacement of 900,000 TOE by the year 2010, and cumulative savings of 7.6 million TOE and 22.5 million tonnes of CO_2 from 1994 to 2010.

- ***New regulations and financial incentives to promote energy conservation and renewable energy.*** New laws and regulations, established in 1993 and 1994, specify a three part grant and assistance program: 1) up to 10,000 Tunisian Dinars (approx. $10,000 US) or 50% of total cost of an energy audit; 2) up to 50,000 TD or 50% of total cost for demonstration projects; 3) up to 100,000 TD or 5% of total cost for actual implementation projects. In addition, Tunisia has implemented a 10% reduction in import tariffs for renewable energy and energy efficient equipment, and suspension of value added taxes in the absence of local manufacturers for similar equipment.
- ***Efforts to reduce urban pollution.*** These include the purchase of mobile laboratories to measure atmospheric and water pollution, a recently completed study on atmospheric pollution and ambient air quality in Tunisia, and recently initiated program of inspections, checks on engines, tuning and maintenance installations to reduce fuel consumption in the transportation sector. The government has also instituted a Special Fund for Pollution Reduction (FODEP) to assist enterprises in financing the adoption of non-polluting technologies.

A.3 Prior or Ongoing Assistance

The present project will build upon a large number of relevant activities undertaken by the Tunisian Government with bilateral and multilateral support, including:

- ***The UNDP/GEF regional Maghreb capacity building project*** ("Capacity Building in the Maghreb to Respond to the Challenges and Opportunities created by National Response to the Framework Convention on Climate Change"). This regional initiative focuses on general capacity building through workshops and study tours, on the establishment of Sustainable Energy and Environment Information Centers in each of the four project countries (Morocco, Algeria, Tunisia, and Libya), and on the development of tools and mechanisms for funding specific climate change projects. These regional activities should help to reinforce the inventory, mitigation assessment, and action plan elements of the present project. At the same time, the present project has been designed to avoid duplicating efforts undertaken under the regional project (see Section B.4.1). In fact, the Maghreb project was formulated on the assumption that national activities, such as the present project, would be undertaken with separate funding.
- ***The World Bank/GEF solar water heating project.*** This project will promote the commercialization of solar water heating technology in the residential and tertiary sectors by conditioning the market for sustained penetration of the technology as a least cost alternative under competitive market conditions.
- ***The Tunisian National Observatory for Environment and Development (OTED).*** This unit is being established within the Ministry of Environment with UNDP support. OTED will set up a database of environmental indicators, prepare State of the Environment reports, and act as a repository for other environmental information.
- ***Establishment of a Sustainable Development Network.*** Financed by UNDP and implemented by the Regional Institute for Computer Science and Telecommunications (IRSIT), this project will reinforce national capacity in sustainable development by

catalyzing information exchange and dissemination among government, non-government, research, and private sector institutions and individuals.

- ***Strategic planning studies in energy efficiency and renewable energy.*** The World Bank has supported the development of detailed documents that provide a useful analysis and compendium of Tunisian experience with energy efficiency and renewable energy, with assessments of cost and potential for specific options. Completed by INESTENE and the Energy Conservation Agency (AME), these studies will be an important input to the mitigation assessment and action planning exercises undertaken under the present project.
- ***Special Energy Program.*** A GTZ funded project implemented through AME with the objective of developing a rural energy supply system by promoting utilization of renewable energy sources for basic energy needs and developing wood energy saving techniques and equipment.
- ***Energy conservation and demonstration projects in industry and transport.*** This World Bank loan supported project includes energy audits, elaboration of energy savings action plans, training and capacity building, and dissemination of photovoltaic lighting systems in rural areas.
- ***Regional energy efficiency standards development for building design*** in Algeria, Morocco and Tunisia. This European Union (EU) financed project is ongoing and is coordinated by AME.
- ***Data base on energy efficiency indicators***, supported by the EU, and implemented by the National Energy Observatory (ONE) of AME.
- ***Photovoltaic refrigeration***. The French government is assisting with an evaluation of the feasibility of PV refrigeration, with a view toward large scale diffusion.
- ***Maghreb regional energy planning project.*** Supported by the EU, this project consists of the development of demand scenarios to 2020, the development of least cost energy strategies, and evaluation of their environmental impacts.
- ***Forestry and Pastoral Land Inventory***, supported by the World Bank. This recently completed study included remote sensing, aerial photography, and establishment of a computerized system for analysis and storage of key forestry and pastoral data (including land use, biomass cover, and primary production).
- ***The Vulnerability and Impact Assessment Adaptation Study and Mitigation Study in Tunisia's Bizerte Lakes region***. This UNEP-supported study was recently completed as part of the Mediterranean Action Plan.
- ***Coastal area audits and protection strategy.*** With support from the French government, the Department of Land Use Planning has conducted audits of coastal areas, and is preparing a strategy and a "charter" for coastal protection.

A.4 Institutional Framework for Sub-Sector

Principal responsibility for environmental management and protection in Tunisia lies with the Ministry of Environment and Land Management (MEAT), created in 1991. MEAT inherited two pre-existing environmental agencies, the National Environmental Protection Agency (ANPE) and the National Office of Water Quality and Supply (ONAS), and has created two new departments, the Department of Environment and Quality of Life and the Department of Land Management. MEAT has also recently created a Coastal Zone Management and Protection Agency (APAL). MEAT has nominated the Division of Industrial Environment within the Department of Environment and Quality of Life to coordinate the present project.

Other ministries and agencies are responsible for specific management and research activities that are related to environmental protection and, more specifically, to climate change concerns. The National Meteorological Institute has followed scientific research on global climate change and the work of IPCC Working Group I, and will be involved in future coastal research activities. The Energy Conservation Agency (AME) has a broad mandate covering not only energy efficiency, but also renewable energy, sectoral studies and planning, maintenance of the national energy data base, and informational campaigns. AME assisted in the preparation of a preliminary, unofficial GHG inventory. The Ministry of Agriculture manages overall agricultural policy, and through its Forestry Department directs several programs to increase biomass cover and minimize land degradation. The Department of Air and Maritime Port Services of the Ministry of Equipment and Habitat has responsibility for coastline management, in particular relation to ports and harbors.

In 1992, Tunisia established a National Climate Change Committee to follow up on the UNFCCC and to develop a common Tunisian positions on climate issues. Present membership in the Committee includes the Ministry of Environment and Land Management, Ministry of National Economy, Energy Conservation Agency, Ministry of Transport and the National Meteorological Institute.

B. PROJECT JUSTIFICATION

This project will assist Tunisia in preparing national communications consistent with the requirements of the Climate Change Convention (UNFCCC). The Convention provides a clear mandate for all of the activities planned in this project. Article 12 requires developing countries to prepare national communications, due three years after entry into force of the Convention. Article 4.1 calls on all countries to formulate and implement programs to mitigate and adapt to climate change. In addition, Article 8 of the Desertification Convention provides for coordination with UNFCCC communications for countries experiencing serious drought and/or desertification.

At the national and local level, this project will help to improve the management of natural resources, increase the efficiency of energy use, reduce local pollution, and strengthen institutions. By furthering these national sustainable development goals, this project will strengthen public and government support in Tunisia, and lay the foundation for further initiatives that may be needed to address the threat of global climate change.

B.1 Problems to be Addressed: The Present Situation

The prospect of global climate change and international efforts to avoid it present Tunisia with serious risks and significant opportunities. With its concentration of population and economic activity in coastal areas, fragile arid and semi-arid ecosystems, and significant problems related to land degradation and desertification, Tunisia is extremely vulnerable to the potential effects of global climate change. At the same time, it is a country that possesses significant potential for reducing greenhouse gas emissions, with relatively high energy intensity, substantial renewable energy resources, widespread awareness of the benefits of energy efficiency, and support for reforestation efforts. Such efforts would reduce GHG emissions, while meeting other national development objectives, such as reducing land degradation, air and water pollution, and energy import requirements.

By ratifying the UNFCCC in July 1993, and establishing the National Climate Change Committee in 1992, the Tunisian government has demonstrated its commitment, in principle, to global climate change issues. However, it has yet to undertake major efforts to address these issues at a local level. Several Tunisian officials and experts recognize the risks posed by increasing atmospheric GHG concentrations, the opportunities available for reducing GHG emissions, and implications of the Convention, but this understanding is neither widespread nor profound.

Knowledge about the sources, sinks, and potential impacts of greenhouse gases remains very limited in Tunisia. Unlike many other developing countries, Tunisia has not participated in the active bilateral and multilateral climate change study programs, such as the US Country Studies Program, GTZ program, and UNEP/RISO Abatement Costing Studies activities, which together have raised awareness and capacity in over 60 countries.

The project's activities are therefore premised upon the following problems:

*a. **The need for additional knowledge and expertise to comply with the national communications requirements of the UNFCCC.*** It is of foremost importance that national expertise and institutional capacity be developed and strengthened to comply with the Convention's requirements for data collection, inventory assessment, policy development, and program implementation. While Tunisia has recently established a Ministry of Environment and Land Management and a Climate Change Committee, these are relatively new institutions dating back to 1992, with little practical experience in climate related projects. A sound basis for response to the UNFCCC requirements exists in terms of institutional existence, willingness on the part of key government officials to participate, and a cadre of capable policy analysts from all relevant disciplines. However, there is a general lack of understanding about the data needs and procedures for conducting inventories, how to track the sinks and sources of greenhouse gases, and how to develop policies and programs that address climate concerns.

*b. **Limited understanding of the relationship between climate change mitigation strategies and attainment of national sustainable development objectives.*** While Tunisia is notable for its numerous national programs and actions aimed at coastal, forest, and urban environmental protection, knowledge about the linkages between these programs and climate change mitigation needs to be reinforced among key decision makers. Within the government there is currently little experience of how to integrate climate change issues into overall development plans.

*c. **The need for better coordination among ministries, agencies, and institutions in areas pertinent to climate change.*** Intensive coordination among these entities will be needed to effectively deal with the multi-sectoral nature of most climate concerns. Better coordination between government institutions will also enable a more consistent approach to policy setting and avoid duplication of effort. One context for such coordination is the Climate Change Committee, but it has yet to meet on a regular basis. With its strengthening of the CCC and use of multiple

institutions, this project provides an important opportunity for the Ministry of Environment and Land Management to build on its good contacts with other government agencies, and engender improved and lasting inter-institutional collaboration and coordination.

*d. **The need to assess and value the significant vulnerability of Tunisian society and ecology to accelerated sea level rise due to global warming.*** Given Tunisia's dependence on the sea, considerable attention has gone towards creating coastal protection measures, particularly in recent years. However, these measures have principally addressed the problems created by unplanned development. There is at present very limited awareness or understanding of the magnitude of impacts that projected sea level rise might have over the next 20-100 years.

B.2 Expected End of Project Situation

Upon completion of the project, Tunisia will have greatly increased awareness of its vulnerability to climate change and its opportunities to contribute to global efforts to stabilize greenhouse gas emissions. Overall, it will possess the improved institutional and human capacities necessary to respond to the UNFCCC. End-of-project outcomes include:

- An enhanced institutional infrastructure, for integrating climate change issues into development planning, and, more specifically, an invigorated and more active Climate Change Committee.
- A set of linkages between national and international institutions that will promote and perpetuate a climate change policy dialogue and action after the project is completed. These linkages will also facilitate the continuing inclusion of climate change concerns into sectoral policy-making.
- Active processes for updating and maintaining the national inventory of greenhouse gas emissions and sinks, developing emission scenarios, and preparing future national communications in accordance with evolving COP guidelines.
- An awareness of the national vulnerability to sea level rise, and the consequent ability to mobilize further support to address climate change concerns.
- Sectoral action plans, reflecting a set of policies and initiatives aimed at controlling Tunisia's greenhouse gas emissions and reducing the vulnerability of coastal activities to sea level rise.
- Ongoing policy development and project proposals aimed at further emissions reduction, consistent with national development objectives.
- A cadre of professionals both in government and supporting institutions capable of conducting further mitigation, vulnerability assessments, and actions plans.

B.3 Target Beneficiaries

The proposed project has significant global environmental benefit in that it targets the identification, formulation and implementation of GHG emission reduction strategies, which will ultimately contribute to a lowering of the rate of accumulation in the atmosphere of the primary GHGs: carbon dioxide; methane; and nitrogen oxides. It will thus be beneficial both for the global environment as well as for the long-term sustainable development of the region, which is already at

risk from desertification, land and coastal zone degradation. Lessons learnt through this project will have considerable potential for transfer to other regions, and will leverage further global benefits.

B.4 Project Strategy and Institutional Arrangements

B.4.1 Project Strategy

The project strategy has been tailored to the unique situation in Tunisia: a highly vulnerable coastal economy, sophisticated institutions, significant national expertise, and a readiness to undertake substantial efforts, through sectoral actions plans, to reduce greenhouse gas emissions.

Over the past decade, Tunisia has made significant progress in improving environmental awareness, management, and protection in general. It has established numerous environmentally supportive initiatives and regulations, agencies to implement and enforce them, and funds to encourage private sector involvement. There is a growing cadre of technical and policy experts on a range of environmental matters, albeit with limited knowledge of greenhouse gas and climate change issues. The project will thus seek to capitalize on this momentum, and infuse existing institutions and experts with an awareness of how climate change issues intersect with their national and local concerns.

With an evolving Climate Change Committee, a growing Ministry of Environment and Land Management, an internationally respected Energy Conservation Agency, and other relevant agencies in place or planned (APAL, OTED, ONE, etc.), the institutional context for the project is already well established. While no new institutions will be needed to achieve a successful project outcome, existing ones will need to be strengthened, and in some cases enlarged.

Strategies for project design and implementation include:

1. ***Training of local experts and officials.*** Through a series of output-oriented training, local institutions and individuals will gain the capability to: a) comply with the UNFCCC commitments and communications requirements; b) estimate future GHG emissions and opportunities to reduce them; c) assess vulnerability to accelerated sea level rise and evaluate response options; and d) develop sectoral action plans that can effectively integrate national objectives and global climate change concerns.

2. ***Maximum use of national experts.*** The project relies significantly on government staff, local research institutes, and short-term local consultants to the extent possible. International consultants will be used principally to transfer skills through training workshops, assist with methodology/model evaluation and implementation, and advise on latest technology and policy developments internationally. Relevant agency officials have been consulted in order to assess the likely availability of national experts to assist with each major task of the project.

3. ***Development of an active national policy dialogue on climate change issues.*** The project will raise awareness and stimulate discourse at many institutional levels regarding the linkage between climate change issues and immediate national concerns, such as land degradation, desertification, urban pollution, coastal protection, and energy policy. This will

be accomplished through an enlarged and invigorated National Climate Change Committee and through national seminars that will disseminate and validate project outputs (inventory, mitigation study, vulnerability assessment, action plans) and provide a forum for developing national communications to the UNFCCC. These activities will benefit from the development of regional policy discussions stimulated by the regional Maghreb project through regional seminars and workshops.

4. ***An ongoing process for developing national communication to the COP.*** The project will build national capacity to conduct, maintain, and update national GHG inventories and emissions projections, and establish a process for developing consensus on national communications.

5. ***Distinct project outputs as opportunities for learning and disseminating results.*** The preparation of several analyses and reports, which will require the acquisition and use of specific tools and methods, will provide important opportunities for acquiring practical skills and developing lasting capacity. Major reports are envisioned for each of the five immediate project objectives described in D. below, and their broad dissemination will help to raise awareness of climate change issues.

6. ***Active involvement and coordination among relevant institutions.*** The project is designed to utilize the skills residing in many institutions, avoid duplication of capabilities, and encourage better coordination of activities. The participation of relevant stakeholders in the various project activities and technical subcommittees will facilitate a strong embedding of climate change policy in sectoral policies.

7. ***Links with international projects and institutions.*** An international counterpart institution with extensive experience in climate change issues will be subcontracted to provide continuous backstopping assistance to the National Project Director, including formulation of detailed workplans, design of training programs and selection of methodologies and international consultants. In addition, the project will benefit from other climate change activities being carried out by other GEF implementing agencies and by other multilateral and bilateral organizations, through mechanisms established under the GEF regional Maghreb project and the Project Advisory Network described below.

This project is also designed to benefit from the outputs and activities of the UNDP/GEF Maghreb regional capacity building project, while avoiding duplication of effort. In particular the Maghreb project envisions the following activities at the national level that will intersect with the present project:

- a synthesis report on institutions, policies, and expertise relating directly or indirectly to climate change. (Regional project output 1.1) This report will form the basis for more detailed assessment in the present project to more precisely characterize the effects of specific fiscal policies and ongoing national initiatives (such as Energie 2010) on GHG emissions and prospects for their abatement. (Output 2.1)
- identification of institutions and individuals with interest, responsibility, and expertise in climate change areas. (Regional project output 1.2) This will be of direct use to the NPD and PC in assigning institutions to specific activities, and in recruiting national consultants to assist in project implementation.

- training programs on general climate change issues, UNFCCC, and other more specific technical areas (yet to be determined). (Regional project output 1.2) As a result of the significant training component of the Maghreb project, the training programme of the present project was kept to a minimum and oriented towards enabling project staff to complete project activities. The NPD may need to revisit the training programme planned here, as the Maghreb training activities take shape.

In summary, the project strategy will assist Tunisia to fulfill its obligations under the Convention and to effectively participate in the global effort to limit GHG emissions and develop GHG sinks. In this regard, the project will simultaneously contribute toward national environment and development priorities, while adhering to criteria specified under the Convention.

B.4.2 Institutional Structure

The Ministry of Environment and Land Management will hold overall responsibility for project implementation. The Climate Change Committee will oversee and advise project management. Its present membership -- Ministry of Environment and Land Management, Ministry of Agriculture, Energy Conservation Agency, and the National Meteorological Institute -- will be expanded to ensure contributions from all relevant institutions. Technical subcommittees will be established to work closely with project staff and consultants on more detailed and technical matters, while the full CCC will advise on policy-oriented issues.

Numerous other agencies and ministries will play prominent roles in project implementation. The Energy Conservation Agency and the Forestry Department of the Ministry of Agriculture will play important roles in conducting specific project activities related to the inventory and mitigation analyses, given their combined expertise in the two sectors -- energy and land use change -- which are likely to account for the bulk of Tunisian GHG emissions. The sea level rise vulnerability assessment should involve the newly created Coastal Zone Management and Protection Agency (APAL), with active assistance from the Department of Air and Maritime Port Services of the Ministry of Equipment and Habitat, and the National Meteorological Institute. In addition, the Ministry of Transport and specific agencies within MEAT (National Observatory, ANPE, and ONAS) are likely to contribute to specific tasks. As appropriate, these various institutions will be involved both at a policy and technical review level through the Climate Change Committee and at an operational level with implementation of specific activities.

While MEAT will manage the day-to-day and overall project operations, it will delegate specific project responsibilities to those institutions within and outside the Ministry most suited to each task. The suggested parties responsible for each project activity are indicated in Section D below. These may need to be further elaborated and modified, as detailed workplans are elaborated (Activity D.1.5).

a. National Climate Change Committee (CCC)

The present project will help to strengthen the nascent CCC, and provide an important context for enlarging its support and participation, and for its development into a policy-making body that incorporates high-level governmental and non-governmental representation. With relation to this project, the CCC should focus on climate change policy issues as opposed to the day-to-day

implementation of capacity-building objectives, although it will advise project execution as necessary. It will review all project outputs and reports, and mobilize support for project activities such as data collection and organization of project workshops. The committee will advise the National Project Director in developing major project initiatives and will ensure inter-ministerial coordination.

Within the first month after project commencement, membership to be expanded to include other ministries and institutions associated in the implementation of the project, such as:

- Ministry of Agriculture (both the forestry department and a department responsible for general agricultural statistics and policy)
- Ministry of Equipment and Habitat
- National Environmental Protection Agency (ANPE)
- Coastal Zone Management and Protection Agency (APAL)
- Tunisian Electricity and Gas Company (STEG)
- UNDP (invited role, except for Project Steering Committee in which UNDP will have a full participant role)
- NGOs (1-2 to be identified)

On policy issues that require more immediate resolution, the Chairman and the Project Coordinator will act on behalf of the committee, pending a broader review of the particular issue at the next CCC meeting. In addition to its present mandate, the overall responsibilities of the CCC will include the following:

Establish and prioritize overall policy directions in a consensus process with Committee members.

- Keep minutes of all meetings and include these in a CCC report.
- Ensure effective inter-ministerial cooperation between government and non-governmental sectors within the framework of the project.
- Follow development of UNFCCC and COP policies and guidelines.
- Review and approve annual work plans prepared by the National Project Director.
- Review and approve the annual reports prepared by the NPD on problems encountered, progress towards objectives, and future areas of focus.
- Periodically review the status of implementation and ensure that agreed upon activities are being properly executed.
- Participate in the multipartite review meetings and mid-term and final project evaluations.

b. Project Steering and other CCC Subcommittees

To advise on discrete project objectives and output, the Climate Change Committee will constitute technical and administrative subcommittees. A Project Steering Subcommittee will be responsible for reviewing overall project status and progress, overseeing budgetary and administrative matters, and assuring successful project implementation. The Subcommittee will consist of representatives of all institutions central to project implementation, including MEAT, AME, Forestry Department, UNDP, and other institutions as determined by the CCC. The Project

Steering Committee will meet at least every six months or more frequently at the request of MEAT or UNDP.

While the CCC and NPD will decide upon the number and constitution of additional subcommittees at the outset of the project, four possible ones can be envisioned: an Inventory Subcommittee, a National Communications Subcommittee, a Mitigation and National Action Plan Subcommittee, and a Vulnerability and Adaptation Subcommittee. A fifth Transport Subcommittee might also be desirable, given the intersection of transportation patterns with land use, housing, and overall economic development policies and the rapid growth in GHG emissions from this sector.

These Subcommittees will include representatives of all responsible parties (see Outputs) and other institutions and individuals of relevance to the activities implicated, as well as project staff and national consultants involved in the activities. The subcommittees will meet more frequently than CCC during the period of relevant project activity.

c. National Project Director (NPD) and Project Coordinator (PC)

The National Project Director will hold overall management responsibility for the project. The NPD will be selected based upon technical expertise, knowledge of national policy-making procedures, familiarity with climate change issues, and ability to work well with all institutions involved in the project. The NPD will be a current Government official and thus his or her salary, office space, and administrative support will be provided by the GOT as an in-kind contribution. At least 50% of the NPD's time will be devoted to the project. (See Annex V for responsibilities and qualifications.)

A full-time Project Coordinator (PC) will work closely with the National Project Director, supervising day-to-day activities of the project. The PC will be a current Government official, and thus his or her salary, office space, and administrative support will be provided by the GOT as an in-kind contribution; 100% of the PC's time will be devoted to the project. (See Annex V for responsibilities and qualifications.)

d. International Counterpart Institution.

An international institution with extensive experience in climate-related research and policy analysis will be subcontracted to provide counterpart assistance to the project. This arrangement will assist project management with formulation and implementation of the project workplan and with identifying the requirements for conducting inventories, mitigation analyses, and vulnerability assessments, based on experience not readily available within Tunisia. This arrangement will provide continuity and ready access to international experts that would be difficult to achieve through the use of individual short-term consultants, and will provide more active and intensive interaction than that possible through the international advisory network (see below).

The counterpart institution should be selected shortly after project commencement, and will provide specific assistance with the tasks identified in Annex VII.

e. International Advisory Network.

An International Advisory Network (IAN) will be established that is composed of international institutions currently involved in research activities related to global climate change issues, particularly land degradation linkages. While the IAN will not be physically convened, it will play a vital capacity building role through routine communications with the PC and frequent participation in training programs. Organizations included in the IAN will be integrated into the CC:FORUM consultative process, which seeks to ensure coordinated development/implementation of enabling activities consistent with UNFCCC principles (see Annex VI for contact names and addresses). A preliminary list is offered below:

- United Nations Development Programme (UNDP)
- United Nations Environment Programme (UNEP)
- The World Bank (IBRD)
- UNEP Collaborating Centre on Energy and Environment (UCCEE)
- United States Country Studies Programme (USCSP)
- Stockholm Environment Institute (SEI)
- Gesellschaft fur Technische Zusammenarbeit (GTZ)
- Climate Convention Secretariat (UNFCCC)
- United Nations Institute for Training and Research (UNITAR)
- The START Network
- The Inter-governmental Panel on Climate Change (IPCC)
- Southern Centre for Energy and Environment, Zimbabwe
- ENDA, Senegal
- UNDP/GEF Maghreb Regional Project Coordinator's Office

B.5 Reasons for Assistance from GEF and UNDP

The proposed project will help accelerate the development of GHG emission reduction/storage strategies in Tunisia that are consistent with its unique development priorities. This will be accomplished primarily through the development of institutional capacity, training of personnel, information acquisition/dissemination, and dialogue/cooperation between government and non-governmental sectors.

In line with the Operational Strategy of the GEF approved in November 1995 and the Operational Criteria for Enabling Activities on Climate Change approved by the GEF in April 1996, the GEF is setting aside funding for this project to facilitate the preparatory work for inventories, their analyses, and other enabling and capacity building activities.

The UNDP, a multilateral agency, has consistently demonstrated its strong links and collaborative relations with governments in the pursuit of development programs. It is ideally situated to be the agency responsible for this project. In addition, the UNDP's network of country representatives provides an excellent platform for coordinating the project and ensuring wide dissemination of results.

B.6 Special Considerations

The project is designed to address global as well as national concerns. The direct regional benefit will be the establishment of a long-term capability to reduce the environmental impacts of the energy, transport, and industrial sectors through increased use of renewable energy, energy efficient, and lower emission technologies and improved land use planning by the incorporation of climate change criteria into the decision making process. These criteria will also give further emphasis to efforts consistent with the GOT's development plans, which seek to reduce pressure on wood resources and reforest degraded lands, and increase the use of energy efficiency and renewable energy. These efforts are specifically relevant to parallel UNDP objectives, which include enabling Tunisia to comply with its obligations under the UNFCCC, linking climate change capacity building to critical land degradation issues, and enhancing the degree of collaboration with regional organizations and activities. The project will also work with and involve local NGOs in project activities. NGO representation is provided for on the National Climate Change Committee. NGOs currently play little direct role in the topics to be covered by the project; however, involving the NGO community is an important component of the project. This project also aims to involve the private sectors in the long-term climate change mitigation activities.

B.7 Coordination Arrangements

For this project, coordination arrangements are particularly important given the lack of previous climate change related studies or activities. By functioning as a catalyst with regional and international bodies, this project will play an important role within the MEAT by establishing the framework for its future activities related to climate change. The project will maintain close links with ongoing and planned initiatives in the region through the Maghreb project and the CC:FORUM consultative process. Of particular note will be activities of UNEP's Climate Unit, UNITAR, the USCS, and the Stockholm Environment Institute (SEI).

B.8 Counterpart Support Capacity

Tunisia possesses the basic institutional elements on which this project will need to build. In carrying out this project, the GOT will provide the following:

- Support for the National Project Director and Project Coordinator
- Recruitment or secondment of technical experts from relevant government agencies to the project
- Supply of support services such as secretarial personnel, administrative personnel, etc.
- Provision of basic communication services and office accommodations
- Access to library and other information services

C. DEVELOPMENT OBJECTIVE

The UNFCCC recognizes that climate change is a major threat to the world's environment and development aspirations. Resolution of this problem requires the active cooperation of all

countries. Tunisia, recognizing the importance of addressing climate change concerns, as well as the need to integrate environmental and development objectives, ratified the UNFCCC in 1993.

D. IMMEDIATE OBJECTIVES, OUTPUTS, AND ACTIVITIES

The intent of this project is to allow Tunisia to respond to its obligations as a UNFCCC party, and to advance national interests related to climate change. This project will build national capacity to respond to the Framework Convention, through the preparation of a national inventory of emissions sources and removals of GHGs, the elaboration of a national strategy for reducing greenhouse emissions, and the assessment of potential impacts of sea level rise on coastal communities. As a result of the project, Tunisian institutions will be able to implement energy and natural resource management strategies and actions that yield local, national, and global benefits.

Five immediate objectives form the basis for project activities and outputs:

1. To strengthen Tunisian capacity to comply with national communications requirements under the UNFCCC;
2. To evaluate and document the present institutional and legal framework and ongoing national initiatives, including their implications for GHG emissions, as the basis for evaluating mitigation options and developing a national strategy;
3. To identify and assess feasible options to mitigate the emissions of GHGs or enhance their sinks across all relevant sectors in Tunisia, and to develop mitigation scenarios that achieve national objectives, as the basis for developing sectoral action plans;
4. To scientifically evaluate the impacts of sea level rise upon terrestrial and marine ecosystems, habitats, and economies and elaboration of Stage I adaptation options; and
5. To prepare sectoral action plans that reduce GHG emissions, enhance GHG sinks, and respond to the threat of global warming, while achieving important national sustainable development objectives.

Annex I provides a workplan timetable for achieving these objectives. The timetable reflects the goal of completing initial national communications by March 1997. It is anticipated that the first two objectives shall be completed by this date, while other objectives will be underway. Initial observations from activities under the final three objectives can inform the initial national communications. However, the extent of capacity building and analysis required to meet these objectives means that the final results of the mitigation, vulnerability, and action plan processes will need to inform Tunisia's second national communications.

D.1 Immediate Objective 1: To Strengthen Tunisian Capacity to Fulfill Communications Requirements under the UNFCCC.

Achievement Indicator: The outputs and activities listed under this objective will develop the technical and institutional capacity to ensure national compliance with the Convention and to spur policy debate on climate change issues through attainment of the following: (a) a strengthened National Climate Change Committee (CCC) with enlarged representation and

increased activity; (b) the development of a standardized inventory of GHG sources and sinks, and procedures for its future updating; (c) illustrative emissions scenarios through the year 2020; (d) national workshops that raise awareness of project objectives and findings and initiate national policy dialogue among decision-makers; (e) national communications to the UNFCCC in March 1997; and, (f) preparation for additional communications at the end of the project to relate findings on mitigation, vulnerability, and the resulting sectoral action plans. The lasting outcome of this immediate objective will be an active Climate Change Committee, a lively policy debate on climate change issues, and the institutional capability and technical expertise to generate updated GHG inventories and scenarios.

D.1.1 Output 1: An Institutional Framework and Detailed Workplan for Successful Project Implementation and Continuing Activities to Fulfill the UNFCCC Communications Requirements

Successful project implementation depends on an early and accurate assessment of project needs and the elaboration of a detailed workplan so that the National Project Director and Project Coordinator can effectively manage and monitor the significant number of activities envisioned here. It also depends upon the motivated involvement of numerous national organizations, hence the importance of establishing a strong and well-functioning Climate Change Committee at the outset of the project.

Activity 1.1.1: Strengthen the Climate Change Committee and Set Up Task-Related Subcommittees

Since the Climate Change Committee will oversee and advise the present project and has met only sporadically to date, the first activity of the project will be to convene an enlarged CCC on a regular basis (every 2 weeks at project inception, decreasing to once every 3 months). Candidate institutions for inclusion in the CCC are listed under B.4.2.a. This listing should be further informed by the assessment of institutions, policies, and expertise relating directly or indirectly to climate change that is to be conducted as the first activity of the UNDP/GEF Maghreb regional capacity building project. At its initial meetings, the CCC should constitute technical subcommittees to assist in the review and oversight of principal project activities (see B.4.2.b). The National Project Director will prepare initial suggestions for CCC and subcommittee composition, for revision and approval by the present CCC.

Responsible Parties: NPD and CCC

Activity 1.1.2: Elaborate and Revise Detailed Workplan

To efficiently implement the many overlapping activities and to effectively deploy staff and consulting resources, the National Project Director will oversee the elaboration of a more detailed workplan (see Annex 1) within the first three months after project initiation. Working from the assessment of institutions and expertise to be prepared under the regional Maghreb capacity building project, a detailed staffing and training needs assessment and revised schedule will be prepared for each project output. Terms of reference will be written to assist in the recruitment of appropriate consultants. The institutions to be involved in each activity should be firmly established (the listing of responsible parties here is merely indicative) and project resources allocated to ensure that each institution will be capable of fulfilling its role.

The detailed workplan should consider the schedule of outputs of the Maghreb project (being defined at present), such as plans for regional workshops and training seminars. The workplan should also consider the timing of the National Communications to the Conference of Parties, the first of which is due in March 1997. The NPD and PC should closely follow the COP recommendations for the content and timing of national communications, and revise the project workplan accordingly.

To benefit from experience with similar projects, the National Project Director should employ the services of the International Counterpart Institution and/or a consultant experienced in GHG inventories, mitigation analyses, and vulnerability assessments. (Note that the National Project Director should select the International Counterpart Institution within the first month or two after project commencement.)

The detailed workplan should be submitted by the National Project Director to the Climate Change Committee for its approval within three months of project commencement.

Responsible Parties: NPD, International Counterpart Institution and/or Consultants

D.1.2 Output 2: A Standardized GHG Inventory and Procedures for Inventory Data Maintenance and Updating

Efficient preparation of the GHG inventory will require that numerous agencies be involved and mobilized to assist in data collection and analysis, and that key government staff be trained in inventory methods. The successful coordination of departments and ministries is extremely important, as it will set the stage for future efforts in mitigation analysis and action plan development that will involve many of the same actors. Since inventories are likely to remain a continuing national responsibility under the Convention, it is also essential that a process for maintaining and updating this information be put in place.

With over 50 national inventories completed or well underway, the methods and experience for conducting inventories are well established. The IPCC Inventory Guidelines (1994) provide step-by-step instructions and reference materials. Accompanying software, the Greenhouse Gas Inventory System (GGIS), is also available to assist in inventory preparation. The principal challenge in conducting an inventory lies in the collection of accurate data across all categories of emissions sources and sinks for the inventory base year, which will be 1990 for Tunisia's initial UNFCCC communications.

Fortunately, Tunisia is well equipped to undertake the inventory and establish a process for its maintenance and updating. With UNDP support, the Ministry of Environment and Land Management recently established the Tunisian Observatory for Environment and Development, which will be charged with collection and management of information and data bases related to the state of the Tunisian environment; it can provide the institutional vehicle for maintaining and updating national GHG inventories. In terms of completing the inventory for 1990, a recently completed National Forest and Pastoral Land Inventory should provide much of the required data (e.g. biomass stocks and yields) for estimating emissions and sinks from land use changes (although the base year may differ). The National Energy Observatory maintains detailed time-series energy

use and production data that should suffice for most energy-related inventory requirements, and enable the use of more detailed technology-specific inventory procedures, if desired.

A preliminary inventory for Tunisia has already been developed by a private consultant, working with AME. A version of this inventory was used in the Stockholm Environment Institute/ African Centre for Technology Studies' "Climate and Africa" project, and published in the project's Northern Africa regional report. This inventory should be consulted as a starting point for the present output.

The results of the GHG inventory will help to assess the relative weight given to different sectors in the implementation of Immediate Objectives 3 and 4, mitigation analysis and sectoral action plans.

Activity 1.2.1: Review IPCC methodology, other inventories, and data availability

MEAT staff should review the IPCC methodology in order to develop an initial sense of inventory data requirements. The CCC Inventory Technical Subcommittee and relevant national agencies should provide direction on the existence and location of relevant data. Completed inventories for other countries with similar characteristics (e.g. limited oil and gas production, semi-arid climate, irrigated agriculture, etc.) should also be collected and reviewed.

Responsible Parties: PC and MEAT staff

Activity 1.2.2: Convene inventory training workshop

As the initial workshop of the project, the inventory training is an important opportunity to begin the inter-ministerial cooperation and joint activities essential to project success. The National Project Director and Project Coordinator will be responsible for organizing and managing the training, inviting participants, and recruiting trainers and other presenters. The workshop should utilize national and/or international experts to develop the training programme, based on their experience with other inventory training programs or the conduct of other national inventories. Ideally, an expert from the region who has conducted an inventory in a country with similar characteristics should be invited to describe the inventory development process and lessons learned. Other important aspects of the training include:

- attendance by representatives of all institutions involved in fulfilling inventory data requirements. Representatives should be those with hands-on familiarity with the data collection process and, ideally, with sufficient expertise to provide judgment (e.g. in the form of estimates or assumptions) on how to overcome data constraints (e.g. missing data for 1990, lack of precise correspondence with IPCC categories);
- a length of at least five working days;
- a thorough review of IPCC methodology;
- a review of uncertainty and reliability analysis, per IPCC Guidelines;
- training in the use of GGIS, the IPCC inventory software;
- lessons learned from other inventories, and advice on how to best collect and organize data;
- working sessions where participants begin to match up existing data (brought to the workshop) with the IPCC worksheets; and,

- a session, near the end of the workshop, devoted to the process of maintaining an ongoing data base and procedures for inventory updating.

As with other project workshops, the NPD should consider a venue at sufficient distance from staff offices to minimize other work-related distractions.

Responsible Parties: NPD and PC

Activity 1.2.3: Complete Inventory and Report

To complete the Tunisian inventory, MEAT project staff, working with representatives of relevant ministries and departments, will need to collect -- or develop, based on limited existing data and expert judgment -- all additional data needed. Under the PC's direction, the IPCC/OECD methodology will be applied to generate a full inventory of GHG sinks and sources. National consultants may be employed in completing this effort, which will include publishing an inventory report, with full documentation of data sources and any assumptions or estimates made. The inventory report should also identify missing data and suggest further data collection efforts. Draft copies should be circulated through all relevant ministries to allow for comments and corrections, with the final version made available to all interested parties.

Responsible Parties: PC, project staff, affiliated institutions (e.g. AME, Forestry Department) and national consultants (if needed)

Activity 1.2.4: Set Up Databank and Updating Process

Once the initial inventory report is completed and reviewed, subsequent to the first national workshop (see below), the NPD and PC should establish a process for maintaining and updating inventory data. The NPD will determine the institutional location for maintaining this databank. A likely candidate is the Tunisian Observatory for Environment and Development (OTED). However, the NPD may choose to avoid potential duplication of information currently residing in other institutions (National Energy Observatory, Forestry Department) and allocate responsibility by sector to different agencies. Inventory maintenance and updating procedures should be documented in the form of guidelines that specify: form of the database (use of GGIS software; separate computerized database; linkages to other relevant data bases, such the national energy data base), frequency of updating, process for addressing unmet data requirements, and staffing needs. National consultants may be needed if a new computerized database is created, but the need for such a tool will need to be justified given the limited data needs of the inventory and the existence of other related data bases in the country.

The PC should closely monitor further development of inventory procedures and requirements by the IPCC and COP, and consult relevant literature on inventory studies, and key international institutions (e.g. UNEP and USCSP, which have sponsored numerous inventories, and CC:TRAIN) to inform the updating procedures. Furthermore, the resources of the regional Maghreb project may be used to supplement efforts for reviewing and updating inventories.

Responsible Parties: NPD, PC, OTED and possibly, national consultants

D.1.3 Output 3: Indicative GHG Emission Scenarios

Continued rapid economic growth and sustained pressure on biomass resources in Tunisia could mean a significant rise in GHG emissions. The extent of growth will depend on numerous interrelated factors: economic strategies, energy policies, fuel prices, electrification and grid expansion, agricultural policy, land use and transportation patterns, and the success of ongoing reforestation, energy efficiency, and renewable energy initiatives.

Indicative, "business-as-usual" or "baseline" GHG emissions scenarios form the essential basis for evaluating mitigation options and developing mitigation scenarios, and proceeding with Immediate Objective 3 below. Assessing the costs and benefits of specific options requires a "baseline" trajectory (or trajectories) of activities that can be modified and emissions that can be reduced.

Article 12.1.(c) of the Framework Convention requests from each Party, as part of its national communications, "if feasible, material relevant for calculation of global emission trends." Thus Output 3 is thus consistent with Tunisia's commitment under the UNFCCC and will help contribute to a better assessment of emission trends on a regional and global basis.

Activity 1.3.1: Review/select scenario method/tools:

The development of internally consistent scenarios typically requires the use of scenario building models or frameworks, and as noted above, these models should be capable of mitigation as well as baseline scenario analysis. The PC should begin by reviewing the scenario tools and models in use in Tunisia, in collaboration with the CCC Mitigation Technical Subcommittee and relevant members. (For instance, AME has used the MEDEE model for energy demand projections, but MEDEE lacks energy supply and emissions modeling capabilities necessary for energy sector mitigation analysis.) The project team should review materials relevant to the selection of scenario tools, including the IPCC Working Group 2 Second Assessment Report, Chapter IV.B. "Methods for Mitigation Analysis" and its relevant Appendices (Appendices I and IV describe specific tools and methodologies for both energy and non-energy sectors), and the US Country Studies Program Mitigation Assessment Handbook, Version 2.0. In consultation with AME for the energy sector, the Forestry Department for land use and forestry analysis, and other agencies depending on the inventory results, the PC should select the methodologies and any models to be used. The counterpart international institution and the CC: TRAIN and CC:INFO networks should also be consulted for advice.

The choice of methodology and modeling framework should be capable of assisting in Output 1.3 (indicative scenarios) and Immediate Objective 3 outputs (evaluation of mitigation options).

Responsible Parties: MEAT (integration), AME (energy), Ministry of Agriculture (agriculture/forestry)

Activity 1.3.2: Training in scenario analysis

Based on the methodologies and models selected, the PC will organize one or more (energy, forestry/land use, integration, etc.) training courses in scenario analysis and application of the

selected modeling tools. These trainings should be coordinated with and build upon any regional training course that might be undertaken as part of the regional Maghreb project.

Responsible Parties: PC, international consultants

Activity 1.3.3: Conduct scenario analyses

Using the identified methodology, the project team will prepare emissions scenarios through the year 2020, with estimates for the years 2000 and 2010, based on the prediction of likely, "business-as-usual" activities under three hypotheses: pessimistic, probable, and optimistic. In order to meet the March 1997 UNFCCC communications deadline, initial results will be summarized in a brief report due at the end of 1996 and elaborated in a fuller report, once the scenario analyses are completed.

Responsible Parties: MEAT (integration), AME (energy), Ministry of Agriculture (agriculture/forestry)

D.1.4 Output 4: Preparation of Communications

The activities described below will enable the preparation of these communications in accordance with Article 12 of the Convention, through a process of national workshops linked with the preparation of communications. National workshops are essential for ensuring that communications are representative of national interests and reflect a consensus of expert opinion and policy-maker support.

Activity 1.4.1: Convene First National Workshop

Upon completion of the national inventory and initial emissions scenarios, and at least one month prior to the national communications deadline (March 1997), a first Tunisian national workshop on climate change issues and communications to the UNFCCC will be convened. It will provide an opportunity to:

- Present and validate the GHG inventory results and initial emissions scenarios;
- Present and validate the current situation report (Output 2.1);
- Raise awareness of project activities and the UNFCCC;
- Develop initial elements of a national strategy, and,
- Discuss policy implications of UNFCCC and prepare ground for Tunisia's first national communications.

The NPD and PC will take responsibility for organizing and managing the workshop, with assistance from the Climate Change Committee. Participation by a wide range of national policy-makers and technical experts should be sought.

Responsible Parties: NPD and PC

Activity 1.4.2: Prepare National Communications

The first developing country communications to the Conference of Parties are due in March 1997, three years after entry into force of the Convention. These communications will include reporting of the national inventory results, "a general description of steps taken or envisaged by the Party to implement the Convention", and "any other information that the Party considers relevant to the achievement of the objective of the Convention". (Article 12, UNFCCC) Communications will therefore seek to incorporate the results of project Output 1.2 (inventory), Output 1.3 (emissions scenarios), and Output 2.1 (review of ongoing national activities). They will also reflect input from the national workshop (above).

Responsible Parties: NPD, PC, CCC, national consultants (as needed)

Activity 1.4.3: Convene Second National Workshop

Near the end of the present project, a second national workshop will provide an opportunity to:

- Present and validate the mitigation analysis, vulnerability assessment, and draft sectoral action plans;
- Identify actions for continuation after project completion;
- Discuss ideas for further project proposals; and,
- Prepare for subsequent communications.

The NPD and PC will take responsibility for organizing and managing the workshop, with assistance from all members of the Climate Change Committee. As with the first national workshop, participation by a wide range of national policy-makers and technical experts should be sought.

Responsible Parties: NPD and PC

Activity 1.4.4: Subsequent Communications

While the frequency of subsequent communications has yet to be determined by the Conference of Parties, additional communication requirements will arise, most likely after the termination of the present project. Contingent upon these requirements, the preparation of additional communications may need to be arranged. Additional communications will provide the opportunity to relate the findings of project activities and to utilize the updating mechanism for issuing a revised national inventory.

Responsible Parties: NPD, PC, and CCC

D.2 Immediate Objective 2: Evaluate and Document the Present Institutional and Legal Framework and Ongoing National Initiatives, Including Their Implications for GHG Emissions, as the Basis for Evaluating Mitigation Options and Developing a National Strategy.

Achievement Indicator: A thorough understanding of constraints and opportunities presented by the present institutional and legal framework documented in a clear and concise report, which will provide an essential basis for evaluating mitigation strategies and proceeding efficiently and effectively with national outputs and activities listed under subsequent objectives.

D.2.1 Output 1: Assessment of Institutions and Initiatives

Numerous existing laws, regulations, and institutions may directly or indirectly affect GHG emissions and the prospects for reducing these emissions through further policy and technology development. Examples might include financial incentives for low emission technologies or the effect of land use planning practices on transportation needs. As noted above (B.4. Project Strategy), one of the initial Maghreb regional project outputs will be a national report on institutions, policies, and expertise generally. This present output will utilize this report -- in fact it should ideally be conducted in coordination with the regionally-supported effort -- and analyze in greater detail the impacts and opportunities present by each specific policy and initiative.

Activity 2.1.1: Identify and Assess GHG Impacts of Existing Legal & Regulatory Frameworks, Fiscal Policies, and other Ongoing National Activities

The NPD will commission MEAT staff and national consultants to:

- identify all relevant regulatory texts and standards that might effect GHG emissions, and analyze and identify possible regulatory and legislative shortcomings;
- identify all specific fiscal policies applied in the relevant sectors, especially the energy sector, as well as various tax incentives and stimuli that might effect GHG emissions;
- inventory other on-going national and sub-national programs, actions, initiatives and projects;
- assess institutional barriers and constraints; and,
- for each of the above, list the principal objectives, cost, financing, and implementation status and assess their expected potential impacts on GHG emissions in qualitative terms.

The results of this exercise will be compiled in a report for use in preparing national communications and dissemination at the first national workshop.

Responsible Parties: NPD, PC, and parties to be determined.

D.3 Immediate Objective 3: Identify and Assess Options to Mitigate Emissions of GHGs or Enhance Sinks across all Relevant Sectors in Tunisia, and Develop Mitigation Scenarios that Achieve National Objectives, as the Basis for Developing Sectoral Action Plans.

Achievement Indicators: The enhanced technical and institutional capacity to assess the costs and benefits of various technology and policy measures, both in terms of GHG abatement and overall social and economic well-being. This should be reflected in a detailed and peer reviewed synthesis report of GHG mitigation, with supporting sectoral options

reports. These reports should convey an improved understanding of the costs and benefits to the national economy of reducing greenhouse gas emissions and/or enhancing sinks, and should identify specific policies and technologies that can also help to achieve national sustainable development objectives.

D.3.1 Output 1: Inventory and Assessment of Feasible Mitigation Options

A wide variety of options are available for reducing GHG emissions or enhancing sinks, including measures to improve energy efficiency, increase the use of renewable energy, switch to lower carbon fuels (e.g. from oil to natural gas), reduce methane losses from natural gas production and distribution, increase forest and overall biomass cover, recover methane from landfills and oil production venting and flaring, increase use of mass transit, and many others. Results of the inventory will help to inform the priority accorded to the investigation of mitigation options in each of the sectors identified for Activities 2 (energy sector options), 3 (agriculture and forestry sector), and 4 (waste management and other sectors) described below, based on their relative contribution to emissions and the potential for actions to reduce emissions.

This Output will result in a catalogue of options, their costs and potential applicability and benefits. This catalogue will then be used to develop mitigation scenarios, which will provide a means to estimate the combined effect of implementing various options and, if desired, to estimate the aggregate costs and benefits of reducing emissions to the Tunisian economy.

Each activity under Immediate Objective 3 should be conducted in accordance with good practice, and the general approaches outlined by the IPCC (see Working Group 2 Second Assessment Report, Chapter IV.B. "Methods for Mitigation Analysis" and its four Appendices) and the US Country Studies Program in its Mitigation Assessment Handbook (Version 2.0).

Activity 3.1.1: Assess sectoral training and information needs and develop training programs if needed.

The comprehensive assessment of GHG mitigation options requires a wide range of disciplines and data. There are literally hundreds of different technologies and practices that can curtail fossil fuel use, increase biomass cover, reduce methane emissions from agriculture, landfills, and natural gas production and distribution, or minimize other GHG emissions. In addition to cataloguing these options, their costs, feasibility, and overall potential in the Tunisian context need to be identified.

To inventory and assess these options, the NPD should rely to the extent possible on the use of project staff and national consultants, but international consultants may be needed to inform the project team of recent technological developments and the successes and failures of technology and policy initiatives undertaken elsewhere. Project staff will need access to data on performance and cost characteristics of candidate mitigation options; these may be found in existing compendia (e.g. the IPCC Technology Inventory Data Base or the CO2DB data base), or may require further literature review and research. Methods for ranking and screening the multitude of options will also be needed (multi-criteria assessment); these are discussed in the IPCC and USCSP materials, but additional training and adaptation of these methods to Tunisian national objectives may be required.

As the first activity to achieve Immediate Objective 3, the NPD and PC should evaluate existing national capacity to inventory and assess options across all relevant sectors (energy supply, transport, industry, agriculture, forestry, waste management, etc.). Based on this evaluation, the NPD and PC should establish a training program and recruit international consultants to assist in the mitigation analysis effort. The international counterpart institution will assist the NPD closely in this evaluation, and suggest training venues and international experts to assist in filling identified gaps. The NPD will also coordinate with the ongoing Maghreb initiative to take advantage of any regional training opportunities and avoid duplication.

Responsible Parties: NPD, PC, international counterpart institution, and international consultants

Activity 3.1.2: Assess in detail all important energy-related options for emission reduction

Based on initial and unofficial inventory results, the energy sector appears to account for as much as 70 percent of current GHG emissions in Tunisia. Activity 3.1.2 will likely be one of the most intensive efforts of the present project. It should build upon and deepen many of the existing area of AME's expertise: energy efficiency, fuel switching, and renewable energy. Since Tunisia also produces oil and natural gas, options to reduce methane as well as carbon dioxide emissions from hydrocarbon production, refining, transportation, storage, and distribution will need to be assessed in detail; ETAP and other institutions in the hydrocarbon sector will likely contribute to this activity. The electric sector planning and operations will need to be considered in detail, most likely in coordination with the national utility, STEG. Options for the transport sector, presently accounting for 30% or more of energy sector CO2 emissions, will need to be reviewed, implicating the Ministry of Transport. Given the AME's role in energy planning and prospective analysis, it should likely play the key role in implementing this activity and coordinating among the various actors.

The result of this activity will be a report that catalogues feasible energy-related mitigation options, listing estimates for expected performance, cost, and achievable potential for implementation in Tunisia. The report should also suggest a tentative ranking of options, using criteria consistent with national objectives (e.g. overall economic and environmental benefits, employment generation, reduction of foreign exchange requirements).

Responsible Parties: PC, AME, STEG, ANPE, Ministry of Transport, and consultants

Activity 3.1.3: Assess agriculture and forestry options.

Forestry, land use, and agriculture appear to account for the bulk of non-energy GHG emissions in Tunisia, based on preliminary inventory efforts. The Ministry of Agriculture is best situated to coordinate this activity, due to its knowledge of GHG-relevant farming practices from biomass burning to livestock management and due to the Forestry Department's ongoing efforts to increase the forest cover throughout the country. In particular, the Forestry Department's intimate knowledge of the limits of simplistic approaches to tree planting and the need for more participatory and multi-sectoral integrated efforts, are essential for assessing the costs and feasibility of reforestation options.

The result of this activity will be a report that catalogues all feasible agriculture and forestry related mitigation (or sink enhancement) options, listing estimates for expected performance, cost,

and achievable potential for implementation in Tunisia. The report should also contain a tentative ranking of options, using criteria consistent with national objectives.

Responsible Parties: PC, Ministry of Agriculture, and consultants

Activity 3.1.4: Assess waste management and other options.

Current GHG emissions in Tunisia from other sectors have yet to be assessed. Results of the national inventory (Output 1.2) will inform the level of effort that should be accorded to mitigating methane emissions from solid waste management and waste-water treatment, nitrous oxide emissions from fertilizer production, carbon dioxide emissions from cement production, and other emissions from solvent use and industrial production. It is likely that some of these sources are relatively insignificant or difficult to abate.

As with the two activities above, the result of this activity should be a report that catalogues all other feasible mitigation (or sink enhancement) options, listing estimates for expected performance, cost, and achievable potential for implementation in Tunisia, along with a tentative ranking of options.

Responsible Parties: to be determined

D.3.2 Output 2: Report on Mitigation Scenarios

The elaboration of mitigation scenarios is essential to reveal the interdependent effects of implementing a combination of mitigation measures (e.g., more efficient electricity generation technologies may reduce the benefits of electricity conservation measures), to assess the overall physical and economic costs and benefits, and to examine the sensitivity to changes in key uncertain parameters. Established methods for developing and evaluating mitigation scenarios should be used, and are described in detail in IPCC and USCS guidance materials. Methods and modeling tools will be established as the result of Output 1.3 above, since the preparation of baseline emissions scenarios should set the stage for the development of mitigation scenarios. Assuming that bottom-up (engineering-economic) approaches are used for sectoral analyses and modeling efforts, additional macroeconomic analyses may be desirable in order to better evaluate the impacts of fiscal policies on the national economy, and to contrast the "top-down" and "bottom-up" results.

Activity 3.2.1: Create mitigation scenarios and conduct sensitivity analyses

Mitigation scenarios will enable a consistent, comprehensive, and integrated assessment of mitigation options. The PC will need to ensure that consistent methods and assumptions are used by the various parties developing mitigation scenarios. For instance, it is likely that energy and land use/forestry scenarios will need to be developed separately, primarily by AME and the Forestry Department. In addition to the information gathered as Output 3.1 above, they will need common working assumptions for key parameters such as discount rates, fuel price escalation, time frame for the assessment, which gases to consider and how to integrate them (e.g. using Global Warming Potentials or not).

The PC, in consultation with the NPD and Climate Change Committee, will need establish these working assumptions and to determine scenario objectives (e.g. cost thresholds such as "no-

regrets"). The PC, in consultation with the NPD, CCC and the International Counterpart Institution, should also determine the need for and ability to conduct complementary macroeconomic assessments, as noted above.

The NPD and PC should ensure that standard good practices are followed in developing the scenarios. IPCC WG2 Second Assessment Report Technical Appendix IV "Mitigation Assessment Handbook" provides step-by-step guidance in the formulation of energy and land-use/forestry scenarios. The NPD and PC should evaluate the need for scenario development for other emission sources. The NPD and PC should also provide guidance regarding which sensitivity analyses to test the robustness of scenario results and to evaluate the impact of changes in uncertain variables, such as future fuel prices.

Responsible Parties: PC, MEAT staff (integration), AME (energy), Ministry of Agriculture (agriculture/forestry), consultants (as needed)

Activity 3.2.2: Prepare synthesis report on GHG mitigation

The NPD and PC should direct the preparation of a synthesis report, presenting the results of the mitigation scenario analyses and sensitivities, along with descriptions of mitigation options assessed in Output 3.1 above. The report will characterize the costs and benefits to the Tunisian economy of GHG emissions reduction, and suggest the specific options or combinations of options that should be pursued in greater detail in developing sectoral action plans. The report will be peer reviewed, as noted in Activity 4.2.1.

Responsible Parties: PC, MEAT staff (integration), AME (energy), Ministry of Agriculture (agriculture/forestry)

D.4 Immediate Objective 4: To Evaluate the Impacts of Accelerated Sea Level Rise on Terrestrial and Marine Ecosystems, Habitats, and Economies and Elaboration of Stage I Adaptation Options.

Achievement Indicator: The enhanced technical and institutional capacity to assess the impacts of accelerated sea level rise in Tunisia, and a heightened awareness of the vulnerability of the country to global climate change. This should be reflected in a detailed and peer reviewed vulnerability assessment report, which also outlines near-term response options and areas for further institutional and research activities.

D.4.1 Output 1: Vulnerability and Adaptation Assessment of Sea Level Rise Impacts on the Tunisian Environment and Economy

Over 65% of the country's population, its 4 most important cities, 90% of tourist income, and most large industries are situated along the country's 1300 km coastline. With much of the coastline at low elevation, Tunisia is thus particularly vulnerable to the effects of accelerated sea-level rise (SLR). Threats include saltwater intrusion into surface and groundwater supplies, increased flooding risks, loss of marine habitats and species, loss of beaches and tourist attractions, inundation of other low-lying areas with consequences for coastal ecosystems, human settlements, and the Tunisian economy. While it may be too early to implement a comprehensive strategy for response and adaptation aimed at reducing the impacts and potential risks, an assessment of the

vulnerability of coastal communities -- ecosystems, economies, and human settlements -- is a necessary first step.

The importance of coastal protection is well recognized in Tunisia. The Government recently created an Agency for Coastal Zone Protection and Management (APAL) and will soon establish a Laboratory for Maritime Hydrology. Other agencies, such as the Department of Air and Maritime Port Services (Ministere de l'Equippement et Habitat) and the ANPE's Department of Land Use Planning are already active in coastline protection. Recent legislation mandates a 100m coastline set-back for all new construction, 25m in urban areas; but officials recognize that these distances would be insufficient should accelerated sea level rise occur. The Department of Air and Maritime Port Services has commissioned a coastal zone protection study, which is now in the first of three phases, which will result in measurement of coastline, currents, waves, and sediment transport. The resulting data base should prove useful for the SLR vulnerability study. In addition, with support from the French government, the Department of Land Use Planning has conducted audits of coastal areas, and is preparing a "charter" for coastal protection.

The vulnerability assessment will build on this ongoing work and utilize existing methodologies and standard practices, such as the IPCC Common Methodology on Sea Level Rise, the IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations, and methodologies emanating from the recently approved GEF projects: UNEP "Country Case Studies on Climate Change Impacts and Adaptation Assessments" and the recently approved UNDP Maldives project. The US Country Studies program Guidance Document on Vulnerability and Adaptation also provides step-by-step assistance with the stages of a SLR vulnerability study.

Activity 4.1.1: Conduct SLR vulnerability assessment training workshop.

The PC should evaluate existing national capacity in coastal zone management, marine ecology, marine hydrology, and socioeconomic assessment of coastal communities. On the basis of this assessment, they should establish a training program and recruit international consultants to assist in the SLR vulnerability effort. The international counterpart institution will assist the NPD closely in this assessment, and suggest training venues and international experts to assist in filling identified gaps.

Responsible Parties: PC, APAL, Land Use Management Department (MEAT), Ministry of Equipment and Habitat

Activity 4.1.2: Establish scope, methodology, and available data.

The first step of a sea-level rise vulnerability assessment is the definition of the scope of the assessment, the problems of interest, and the assessment process to be used. (see USCS Vulnerability Assessment Guidance Document) Defining the scope involves: a) identifying assessment goals (the most pertinent information to generate, detail needed, who will use it); b) defining sectors to study (agriculture, tourism, ports, etc.); c) selecting the study region (e.g. how far inland or out to sea); d) selecting the time frame (generally 20-100 years for impacts to be evident); e) determining the data needs; and, f) developing the context for the assessment (e.g. the stakeholders and how to incorporate their input).

Once the scope of the study is established, specific methodologies will need to be selected. The IPCC Common Methodology provides a general seven-step framework, and within this framework, specific approaches and data needs still need to be defined. Specific approaches include aerial videotaped-assisted vulnerability analysis, macroeconomic impact models, historical and regional analogue studies, and expert judgment.

The responsible parties will jointly review the available guidance materials, other vulnerability studies, and existing research and data in Tunisia to determine the most appropriate approach, given the time and budget constraints of the present project. The result of this activity should be a detailed approach for use in the assessment, the assignment of specific tasks to individuals or institutions, and a schedule for completion of the assessment.

Responsible Parties: NPD, APAL, Department of Land Use Management, Ministry of Equipment and Habitat, National Meteorological Institute, International Counterpart Institution and/or consultants

Activity 4.1.3: Assess vulnerability to SLR and prepare report

The PC will be responsible for coordinating the project team and ensuring that the procedures defined in the previous activity are followed. The result of this output will be a detailed report describing the vulnerability of Tunisian society, economy, and ecology to accelerated sea-level rise. The report should include a discussion of Stage I adaptation options, i.e. the assessment of available response options and initial measures to build adaptive capacity. The report should also note where further research may be needed and additional institutional capacity needs to be developed.

Responsible Parties: PC, APAL, Land Use Management Department (MEAT), Ministry of Equipment and Habitat, National Meteorological Institute, and consultants

D.4.2 Output 2: Review and Dissemination of Mitigation and Adaptation Studies

Activity 4.2.1: Conduct peer review.

The NPD and CCC should oversee a process of peer review to ensure the high quality and accuracy of the draft mitigation and vulnerability reports. They should appoint a peer review group including key national and international experts, and ensure that their comments are addressed in the final revisions of the draft documents.

Responsible Parties: NPD, CCC, National and international consultants

Activity 4.2.2: Convene validation workshop, transfer knowledge.

In order to spread the knowledge gained and test the validity of report findings, the NPD should convene a study validation workshop. The active participation of a wide audience, including representatives of government agencies, NGOs, academic departments, research institutes and laboratories, and consulting organizations will help to maximize knowledge transfer and capacity building benefits of the present project. Study participants should have the opportunity to present the methods used and to relate the study findings to the concerns and interests of the national

audience. If the timing is appropriate, this workshop can be incorporated into the Second National Workshop (see Output 1.4 above).

Responsible Parties: NPD and PC (workshop), project staff and consultants

D.5 Immediate Objective 5: To Prepare Sectoral Action Plans that Reduce GHG Emissions, Enhance GHG Sinks, and Respond to the Threat of Global Warming, while Achieving Important National Sustainable Development Objectives.

Achievement Indicator: Government plans to reduce GHG emissions and enhance sinks, and a lasting awareness among policy makers of the GHG consequences of various actions. Sectoral action plans will elaborate specific policy initiatives, regulatory reforms, legislative changes, and technology options that are consistent with national sustainable development objectives, while provide GHG reductions as mutual and global benefit. In addition, projects requiring additional incremental cost support will be enumerated, and plans made to seek the requisite funding.

D.5.1 Output 1: Sectoral Action Plans

Sectoral actions plans will translate the knowledge gained through the mitigation and vulnerability assessments (Immediate Objectives 3 and 4) into practical steps that the government can take to advance both national development and goals of the UNFCCC. To date, the preparation of action plans has been largely confined to Annex 1 (industrialized) countries, but several developing countries are presently in the process of preparing action plans. The US Country Studies program is preparing a Guidance Document to Support Preparation of National Climate Change Action Plans, which should be available by the time the activities here are underway. The PC should maintain contact with action plan development in other countries, as part of the activities described below.

Activity 5.1.1: Determine sectoral participation and key decision-makers

Based on the initial findings regarding where significant opportunities for GHG emission reduction or sink enhancement (and coastal zone protection) exist, the NPD, in consultation with the Climate Change Committee, will suggest the sectors that should prepare action plans. The tentative list includes the energy, transport, industry, services, agriculture and waste management sectors.

The NPD will then meet with stakeholders and key decision-makers responsible for planning in the recommended sectors, and enlist their commitment and support for developing an action plan to that addresses climate change as well as other, national objectives. For the proposed action plans to lead to successful plan implementation, the participation and support of key stakeholders and decision-makers from the outset will be essential.

The sectoral participation meetings should assist the NPD in establishing a schedule for plan preparation, division of responsibilities for plan preparation, and the identification of any outside consulting needs. Work teams should be created for each sector and each should be provided with a general terms of reference for preparation of their action plans.

Responsible Parties: NPD, CCC, and key stakeholders and decision-makers

Activity 5.1.2: Reinforce and coordinate ongoing actions.

The first step in undertaking a new planning effort is to ensure that existing and ongoing actions are well formulated and are achieving planned benefits. One example is the National Development Plan for Forest and Pastoral Resources, which seeks to reforest 320,000 hectares from 1991 to 2000. While successful on government owned lands, the initiative has encountered difficulties in motivating private landholders to participate. Rather than undertake altogether new and potentially duplicative initiatives at reforestation, current efforts should be reinforced, with assistance directed towards integrated rural development and coordinating the actors implicated in rural and urban planning. Similar challenges are likely to exist in ongoing energy sector strategies such as Energie 2010; these need to be supported and reinforced prior to undertaking new initiatives.

The result of this activity will be a set of detailed recommendations for improving the design and implementation of ongoing actions and policies. Output 2.1 (assessment of institutions and initiatives) should prove an important starting point for this endeavor.

Responsible Parties: NPD, PC, Sector representatives participating in action plan process

Activity 5.1.3: Design implementation strategy for additional identified options.

The mitigation and vulnerability studies will identify numerous additional technology and policy options to avoid GHG emissions and damage from sea level rise. Translating these options into successful programs and actions that yield anticipated benefits is yet another challenge. As in most countries, current markets and behavior in Tunisia may present formidable barriers and constraints to the introduction of new technologies, practices, and other interventions. Successful programs and actions will therefore need to be carefully designed to avoid failure. To ensure their implementation and enforcement and lasting benefits achieved, institutions may need to be enhanced, legislation and regulations modified, training programs instituted, and stakeholders involved throughout. Each sectoral action plan should therefore:

- review options identified in the outputs of previous project activities, and evaluate them according to additional criteria such as cost eligibility for national and international funding, the adequacy of national expertise, the capacity of implementing agencies to implement and enforce them;
- devise implementation strategies most appropriate for each option, which might include legislation, regulation, capacity building, technology research and development, information campaigns, creation of new institutions, and so on;
- for each option, identify the principal parties and institutions implicated, and determine the role of these in the implementation of the strategy;
- define accompanying measures for strengthening of relevant institutions;
- identify and recommend specific legislative, regulatory, and financial measures (such as tax incentives); and,
- identify appropriate international cooperation to obtain required levels of financing and technology

Responsible Parties: NPD, PC, Sector representatives participating in action plan process

Activity 5.1.4: Prepare and disseminate plans.

The NPD will oversee the development and dissemination of sectoral action plans. Draft action plans should be circulated within CCC and within respective Ministries, prior to final approval and distribution.

Responsible Parties: NPD, PC, CCC, and sector representatives participating in action plan process

D.5.2 Output 2: Implementation of Plan Recommendations

Activity 5.2.1: Implement Sectoral Plan Recommendations.

The CCC shall oversee the achievement of sectoral plan recommendations, and put into place a ongoing procedures that extend beyond the present project timeframe to ensure that each element of the plans is carried out. Outputs of the regional Maghreb project, in particular, materials and networks for developing project proposal and obtaining funding, and implementation of information centers -- should prove invaluable in achieving these goals. Specific elements of this activity might include:

- supporting the enactment of legislative and regulatory reforms;
- the enhancement of new implementation and enforcement institutions;
- actively seek funding where needed to support plan initiatives, benefiting from regional networks and materials created for this purpose under the regional Maghreb project;
- incorporating sectoral plans into an overall national climate change action plan;
- incorporating plan recommendations into other development plans and programs;
- establishing monitoring and evaluation procedures, to measure the attainment of expected benefits; and,
- further refining activities, based on ongoing evaluation.

Clearly the timeframe of the present project will only suffice to initiate those activities, such as legislative reforms, that will require a longer and sustained commitment to fully achieve.

Responsible Parties: NPD, PC, CCC, and sector representatives participating in action plan process

E. INPUTS

The UNFCCC recognizes that developing countries can only meet their reporting requirements if funding is made available. Therefore, there is a strong basis for the financial inputs described below, which provide support for Tunisia to develop institutional capacity, carry out an inventory of greenhouse gas sources and sinks, conduct a thorough mitigation analysis, prepare sectoral actions plans and national communications, and conduct an assessment of national vulnerability to sea level rise and consequent Stage I adaptation measures. Tunisia has also graciously offered to contribute not only significant in-kind support, but a substantial ($US 100,000) cash contribution to the project.

E.1 Government Inputs In Kind

The Government of Tunisia (GOT) will contribute the equivalent of 270,000 Tunisian Dinars in the following inputs:

1. Personnel: 154,126
National Project Director, Project Coordinator, and four technical staff

2. Travel: 12,000
Expenses for in-country travel

3. Office Accommodations, Facilities, Supplies, and Equipment: 103,874
Expenses associated with utilities and locally procured items for the Offices of the NPD and PC, and other project staff. A suitably equipped and supplied office for the PC that has adequate space to accommodate the PC, his staff, and a meeting room. Office communications., including local telephone and mail service. Three project vehicles to be used for meetings, workshops, and local transportation for project staff.

E.2 UNDP and Government Cost-Sharing Inputs

UNDP/GEF will contribute $565,400, and the GOT will contribute $100,000, for this project as follows: Total: $665,400

1. Personnel: $418,000
National experts and consultants will carry out many of the activities and generate many of the listed outputs under the direction and coordination of the National Project Director. International experts and consultants will train and assist national project staff in areas requiring further capacity building.

2. Travel: $66,500
Expenses for external travel by the NPD and PC for purposes of training and orientation. Expenses for international consultants on mission to Tunisia.

3. Training: $54,000
Expenses associated with orientation training for the PC, national workshops, and training workshops.

4. Subcontract (to international counterpart institution) $30,000
An international counterpart institution (yet to be selected) will provide continuous backstopping to the project team, and specific support as detailed in Annex VI.

5. Mission Costs $19,000
Mission costs, mid-term and terminal evaluation.

6. Office Equipment, Facilities, and Supplies $47,500
Computer and related equipment to enable the use of software for inventory, mitigation, and vulnerability analyses, and to allow for electronic communications.

7. Miscellaneous Services $13,932

Sundry, reproduction, distribution, and other support costs.

8. Project Services $16,468

F. RISKS

There are a number of risks to the projects long-term success and sustainability that are common to any capacity building process. These are briefly described below.

F.1 Risks of Project Failure

The project represents an approach to capacity building that emphasizes training, networking, and national dialogue. It is adapted to the particular context and technical skills of Tunisia. One risk is that manpower and equipment resources that are essential to the project's success may not be sufficient. The risk of lack of coordination with the GEF regional project RAB/94/G31 - Building Capacity in the Arab Maghreb to respond to the Challenges and Opportunities created by regional Adherence to the Framework Convention on Climate Change, and hence duplication of the programme identification and timing. To resolve this potential risk, it has been determined that the National Coordinator for the Regional Project will be the same as the National Project Director for the present project, thereby ensuring full complementarity.

F.1.1 National Commitment

If the Tunisian Government does not maintain its input commitments (listed in Section E), the project will not be successful. While there is no way to compel any government to fulfill their obligations, the CCC should regularly review the extent to which national commitments are being met and specifically encourage that the deadline for submission of the national communication is also met. In particular, the National Project Director and Project Coordinator must be ensured sufficient time availability (half-time and full-time, respectively) to effective manage and coordinate the many project activities. If other obligations severely constrain their time availability, there is a significant risk of not fulfilling project objectives. The CCC should monitor National Project Director and Project Coordinator availability, and take any necessary corrective actions.

F.1.2 Interdepartmental and Interministerial Cooperation

The project approach involves close cooperation between various governmental organizations in carrying out activities under the project. If government agencies implicated in each activities are not accorded sufficient project resources and responsibilities, there is a risk that cooperation and coordination will not be effective and the resulting project outputs will suffer accordingly. This risk can be reduced by attentive mediation efforts by the National Project Director and the CCC to address problems as they develop.

F.1.3 Personnel/Administrative Performance

Performance of the National Project Director and the Project Coordinator in coordinating and managing the project will be of utmost importance. The project is structured to give the NPD

and PC a considerable amount of discretion in the identification and pursuit of specific actions under several of the most important identified activities.

F.2 Sustainability and Environmental Risks

The project's emphasis on training, capacity building and institutional development coupled with the establishment of a functioning and active national network is the primary mechanism that will promote the sustainability of the project objectives beyond the term of GEF support. In addition, the project's emphasis on climate change mitigation strategies that are compatible with national sustainability objectives will help stimulate national long-term support for the services and activities of the project. The project will actively promote the marketing of its services and capabilities to both the public and private sectors of the region.

The potential environmental gains resulting from this project will far outweigh any likely negative impacts, such as the minor environmental risks associated with reforestation, renewable energy, and energy conservation. These impacts can be mitigated through proper design and safety precautions.

G. PRIOR OBLIGATIONS AND PREREQUISITES

G.1 Prior Obligations

None.

G.2 Prerequisites

The GOT ratified the UNFCCC on July 15, 1993.

The GOT will make the necessary allocations in national budgets to reflect the contributions indicated in Section E.1, Government Inputs in kind.

The GOT will assist in the support and enhancement of the CCC to undertake national level project activities as described in this document.

The GOT will assign suitably senior and qualified representatives of relevant government agencies and organizations to the CCC and will seek the participation of qualified academic and non-governmental organizations and individuals in the project. The Government will provide expert and consultancy support through the project, will support the work of CCC including periodic meetings.

The GOT agrees to make data and information available to the Project staff and consultants as may be required for implementation of the project, and to provide access to any government agency or organization as requested for purposes of project implementation.

The GOT will assure free movement of project staff, consultants and other personnel, equipment, and information as may be required for project implementation. The project document will be signed by UNDP/GEF and UNDP/GEF assistance to the project will be provided, subject to

UNDP/GEF receiving satisfaction that the prerequisites listed above have been or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialize, UNDP/GEF may at its discretion either suspend or terminate its assistance.

H. PROJECT REVIEWS, REPORTING AND EVALUATION

The project will emphasize internal monitoring and evaluation in order to optimize the process of inter-institutional transfer of knowledge and experience. External monitoring and evaluation procedures will be established in accordance with UNDP practices. In addition, the Climate Change Committee will be charged to maintain close project oversight including periodic technical and programmatic reviews. These reviews will be supported by regularly scheduled project progress reports. A final evaluation of the project will be conducted in accordance with UNDP procedures.

Every six months the National Project Director will prepare a progress report for the Climate Change Committee that will be formally discussed during the Committee's regular meetings. In addition, the project will be subject to tripartite review (joint review by representatives of the government, executing agency, and UNDP/GEF) at least once every 12 months. The project coordinator or project officer of the United Nations executing agency will prepare and submit to each of these review meetings a Project Performance Evaluation Report (PPER). Additional PPERs may be requested if necessary during the project. A project terminal report will be prepared for consideration at the second and final review meeting. It shall be distributed in draft form sufficiently in advance to allow review and technical adherence by the executing agency at least four months prior to the terminal tripartite review.

Mid-term and post-project evaluation will be undertaken by UNDP in collaboration with the relevant parties around month 20 (mid-term) and (post-project) not later than one year after the termination of the project, in order to evaluate the extent to which the outputs of the projects are being used as intended.

I. HOST COUNTRY COMMITMENTS

For the participating country that has signed the UNDP Standard Basic Assistance Agreement (SBAA) the following standard text, appropriately completed, applies:

> "This project document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of (country) and the United Nations Development Programme, signed by the parties on (date). The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement refer to the government cooperating agency described in that Agreement."

For the participating country that has not signed the SBAA the following standard text and the Standard Legal Text for non-SBAA countries both apply:

> "This project document shall be the instrument envisaged in the Supplemental Provision to the Project Document attached hereto The host country implementing agency shall, for the

purpose of the Supplemental Provisions to the Project document, refer to the Government cooperating agency described in the Supplemental Provisions."

The following types of revisions may be made to this project document with the signature of the UNDP principal project representative only provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

"(a) Revisions in, or addition of, any of the annexes of the project document (with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a pre-condition for - UNDP assistance).
"(b) Revisions which do not involve significant changes in the immediate objectives. outputs or activities of a project but are caused by the rearrangement of inputs already agreed to or by cost increases due to inflation: and
"(c) Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility."

J. BUDGETS

Project Budgets for the UNDP contribution and the GOT contribution in kind are shown on the following pages.

J.1 Budget Covering UNDP/GEF (and GOT Contribution in US$)

Project No.: TUN/95/G31/B/1G/99
Country: Tunisia
Project Title: Emissions Inventory of Greenhouse Gases, National Strategy and Action Plans for Emissions Reduction, Sea Level Rise Vulnerability Assessment, and Fulfillment of National Communications under the UNFCCC

Code	Description	Project Total		1995 Total		1996 Total		1997 Total		1998 Total	
		(m/m)	($)	(m/m)	($)	(m/m)	($)	(m/m)	($)	(m/m)	($)
10	PROJECT PERSONNEL										
11.5	International Consultants										
11.51	Prodoc Preparation (PA Phase)		16,000		16,000		0		0		0
11.52	GHG Inventory Training	2	20,000			2	20,000	0	0	0	0
11.53	Mitigation Analysis and Scenario Training	3	27,000			2	18,000	1	9,000	0	0
11.54	Assessment of Sectoral Mitigation Options	7.5	67,500			2	18,000	4.5	40,500	1	9,000
11.55	SLR/CZM Assessment and Training	6	60,000			1	10,000	4	40,000	1	10,000
11.56	Other Short-Term Consultancies	3	14,000			1	4,000	1	5,000	1	5,000
11.99	**Subtotal: Consultants**	**22**	**204,500**	**16,000**		**8**	**70,000**	**11**	**94,500**	**3**	**24,000**
15	Duty Travel										
15.01	Director and Coordinator Travel		10,000				5,000		3,000		2,000
15.02	International Consultant Travel		56,500				18,000		30,500		8,000
15.99	**Subtotal: Travel**		**66,500**				**23,000**		**33,500**		**10,000**
16	Mission Costs										
16.01	Hqs Technical Backstopping		9,000				3,000		3,000		3,000
16.02	Mid-Term Evaluation		4,000				0		4,000		0
16.03	Terminal Evaluation		6,000				0		0		6,000
16.99	**Subtotal: Mission Costs**		**19,000**				**3,000**		**7,000**		**9,000**
17.5	National Consultants										
17.51	Renewable Energy Specialist	6	21,000			1	3,500	3	10,500	2	7,000
17.52	Energy Efficiency Specialist	6	21,000			1	3,500	3	10,500	2	7,000
17.53	Oil & Gas Industry Specialist	2	7,000			0	0	2	7,000		0
17.54	Electricity Production Specialist	2	7,000			0	0	2	7,000		0
17.55	Transportation Policy Specialist	6	21,000			1	3,500	4	14,000	1	3,500
17.56	Agriculture Policy Specialist	3	10,500			1	3,500	1	3,500	1	3,500
17.57	Reforestation Specialist	2	7,000			0.5	1,750	1	3,500	0.5	1,750
17.58	Coastal Zone Management Specialist	6	21,000			1	3,500	4	14,000	1	3,500
17.59	Marine Ecologist	6	21,000			1	3,500	4	14,000	1	3,500
17.60	Land Use Planner	5	17,500			1	3,500	2	7,000	2	7,000
17.61	Jurist/Fiscal Expert	4	14,000				0	1	3,500	3	10,500
17.62	Other Short-Term Consultancies	13	45,500			3	10,500	6	21,000	4	14,000
17.99	**Subtotal National Consultants**	**61**	**213,500**			**10.5**	**36,750**	**33**	**115,500**	**17.5**	**61,250**
19	**Personnel Component Total:**		**503,500**	**16,000**			**132,750**		**250,500**		**104,250**
20	SUBCONTRACTS										
21.01	Subcontract (Management Assistance)		30,000				12,000		12,000		6,000
29	**Component Total:-SubContract**		**30,000**				**12,000**		**12,000**		**6,000**
30	Training										
32.01	National Workshops/Training Courses		35,000				10,000		15,000		10,000
32.02	Study Tours/International Course Travel		19,000				11,000		8,000		
39	**Component Total: Training**		**54,000**				**21,000**		**23,000**		**10,000**
40	EQUIPMENT										
41	Expendable Equipment		7,500				2,500		3,000		2,000
42	Non-expendable Equipment		40,000				30,000		10,000		0
49	**Component Total: Equipment**		**47,500**				**32,500**		**13,000**		**2,000**

Code	Description	Project Total (m/m)	Project Total ($)	1995 Total (m/m)	1995 Total ($)	1996 Total (m/m)	1996 Total ($)	1997 Total (m/m)	1997 Total ($)	1998 Total (m/m)	1998 Total ($)
50	MISCELLANEOUS										
51	Printing and distribution of Reports		10,000				2,000		4,000		4,000
53	Sundry		3,932				1,432		1,500		1,000
54	Project Services		15,988				4,550		7,620		3,818
59	**Component Total**		**29,920**				**7,982**		**13,120**		**8,818**
99	**Grand Total**		**665,400**		**16,000**		**206,232**		**311,620**		**131,068**
100	COST SHARING										
101	Government cost sharing		100,000				50,000		50,000		0
109	**Cost Sharing Total**		**100,000**				**50,000**		**50,000**		**0**
999	**NET UNDP CONTRIBUTION**		**565,400**		**16,000**		**156,232**		**261,620**		**131,068**

J.2 Budget Covering In-Kind Government Contribution (Tunisian Dinars)

Country: Tunisia

Project Title: Emissions Inventory of Greenhouse Gases, National Strategy and Action Plans for Emissions Reduction, Sea Level Rise Vulnerability Assessment, and Fulfillment of National Communications under the UNFCCC

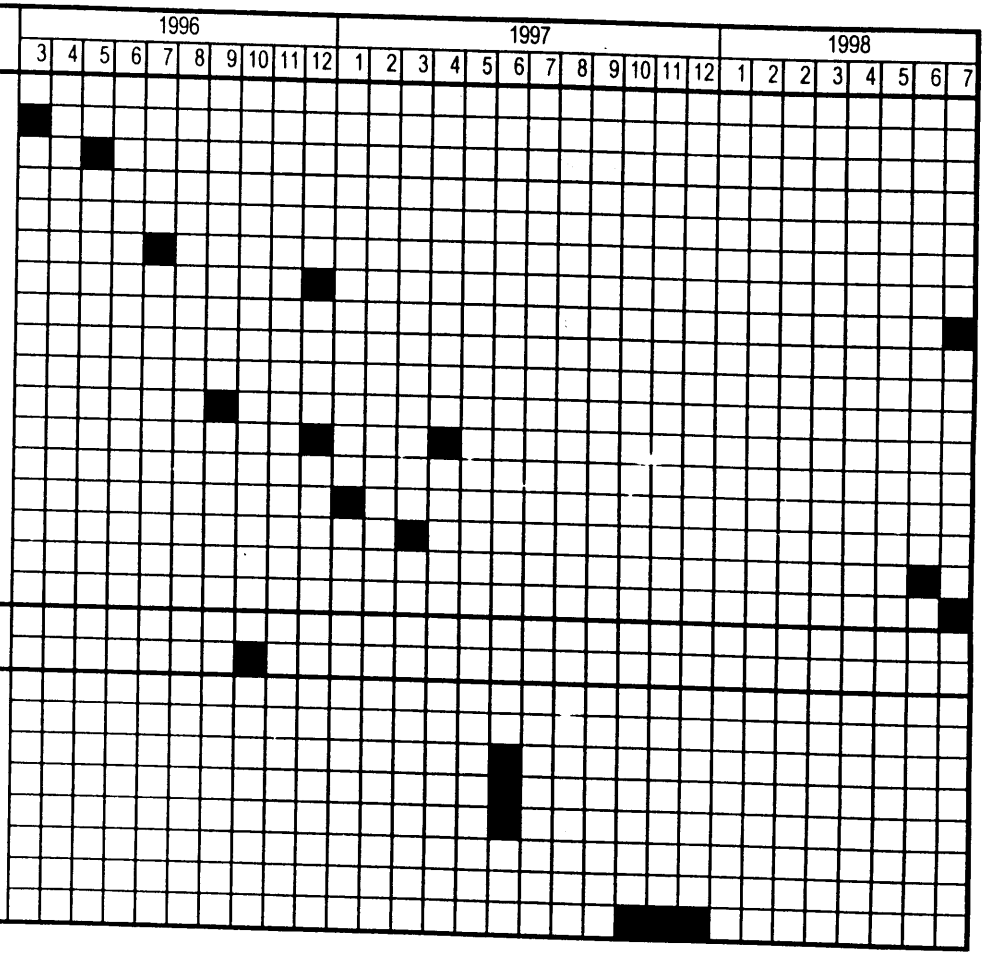
Code	Description	Project Total		1996 Total		1997 Total		1998 Total	
		(m/m)	(Tun Dinar)	(m/m)	(Tun Dinar)	(m/m)	(Tun Dinar)	(m/m)	(Tun Dinar)
10	PROJECT PERSONNEL								
11	National Personnel								
11.01	National Project Director	15	21,210	6	8,484	6	8,484	3	4,242
11.02	National Project Coordinator	30	42,420	11	15,554	12	16,968	7	9,898
11.03	Staff Expert (MEAT)	20	22,624	8	9,050	8	9,050	4	4,525
11.03	Staff Expert (AME)	20	22,624	8	9,050	8	9,050	4	4,525
11.03	Staff Expert (Min Ag.)	20	22,624	8	9,050	8	9,050	4	4,525
11.03	Staff Expert (IME)	20	22,624	8	9,050	8	9,050	4	4,525
12	**Personnel Component Total:**	**125**	**154,126**	**49**	**60,236**	**50**	**61,650**	**26**	**32,239**
15	TRAVEL								
15.01	National Personnel Travel (Local)		12,000		4,800		4,800		2,400
15.99	**Component Total**		**12,000**		**4,800**		**4,800**		**2,400**
40	EQUIPMENT								
42	Non-expendable equipment								
42.01	Vehicles		33,874		33,874				
43.00	Premises								
43.01	Office		30,000		12,000		12,000		6,000
43.02	Utilities		10,000		4,000		4,000		2,000
49	**Component Total**		**73,874**		**49,874**		**16,000**		**8,000**
50	MISCELLANEOUS		0		0		0		0
50.01	Office Supplies, communications, etc.		30,000		12,000		12,000		6,000
59	**Component Total**		**30,000**		**12,000**		**12,000**		**6,000**
99	**Grand Total**	**125**	**270,000**	**49**	**126,910**	**50**	**94,450**	**26**	**48,639**

ANNEX I: TENTATIVE WORKPLAN

Country: Tunisia

Project Title: Emissions Inventory of Greenhouse Gases, National Strategy and Action Plans for Emissions Reduction, Sea Level Rise Vulnerability Assessment, and Fulfillment of National Communications under the UNFCCC

Objective	Output and Activity (by month)
1. Strengthening Capacity to Under UNFCCC	1.1 Institutional Framework (for entire project)
	1.1.1 Strengthen Climate Change Committee
	1.1.2 Elaborate and Revise Detailed Workplan
	1.2 Standardized Inventory and Update Procedures
	1.2.1 Review IPCC meth. & other inventories
	1.2.2 Convene inventory training workshop
	1.2.3 Complete Inventory and Report
	1.2.4 Set Up Databank and Updating Process
	1.3 Emission Projections
	1.3.1 Review/select scenario method/tools
	1.3.2 Training in scenario analysis
	1.3.3 Prepare baseline scenarios
	1.4 Preparation of Communications
	1.4.1 Convene First National Workshop
	1.4.2 Prepare National Communications
	1.4.3 Convene Second National Workshop
	1.4.3 Subsequent Communic tions
2. Evaluate Ongoing Activities	2.1 Assessment of Institutions & Initiatives
	2.1.1 Inv., Assess, and Report on Ongoing Initiatives
3. Identification of Mitigation Options	3.1 Inventory and Assessment of Feasible Options
	3.1.1 Determine sectoral training needs
	3.1.2 Assess energy-related options
	3.1.3 Assess agriculture and forestry options
	3.1.4 Assess waste management and other options
	3.2 Mitigation Scenarios
	3.2.1 Create mitigation scenarios & sensitivities
	3.2.3 Prepare mitigation synthesis report



Objective	Output and Activity (by month)	1996										1997												1998							
		3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	2	3	4	5	6	7
4. Sea Level Rise Vulnerability Assessment & Identification of Stage I Response Options	4.1 V&A Assessment of SLR Impacts																														
	4.1.1 Conduct SLR vulnerability training workshop									■																					
	4.1.2 Establish scope, methodology, & available data																														
	4.1.3 Assess vulnerability to SLR and prepare report																		■	■	■										
	4.2 Review and Dissemination of Mitig. & Adapt. Studies																														
	4.2.1 Conduct peer review																														
	4.2.2 Convene validation workshop, transfer knowledge																					■									
5. Preparation of Sectoral Action Plans	5.1 Sectoral Action Plans																														
	5.1.1 Determine participation & key decision-makers																														
	5.1.2 Reinforce and coordinate ongoing actions																														
	5.1.3 Design strategy for additional identified options																														
	5.1.4 Prepare and disseminate plans																										■	■	■		
	5.2 Implementation of Plan Recommendations																														
	5.2.1 Implement plan recommendations																														

Activities that are ongoing during the period

■ Activities that have definite and scheduled outputs over the period

ANNEX II: TENTATIVE SCHEDULE OF PROJECT REVIEWS, REPORTING, AND EVALUATION

Country: Tunisia

Project Title: Emissions Inventory of Greenhouse Gases, National Strategy and Action Plans for Emissions Reduction, Sea Level Rise Vulnerability Assessment, and Fulfilment of National Communications under the UNFCCC

This annex provides a rough guide, and should be further revised and detailed by project management.

Activity (by month)	1996										1997												1998							
	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
Inception Report			■																											
PC progress report						■						■						■						■							
Submission of PPER											■												■							
Technical Reports	*(e.g. inventory, mitigation, SLR, action plans) Issued as appropriate, per workplan (see Annex 1).*																													
Tripartite review												■												■						
Terminal tripartite review																														■
Mid-term evaluation																		■												
Terminal evaluation																													■	

ANNEX III: EQUIPMENT REQUIREMENTS

Representative equipment needs for the project are listed below.

Quantity	Item	Unit Cost	Total Cost
4	486/Pentium Computers (IBM-PC) - inventory analysis and data base (MEAT) - energy sector mitigation analysis (AME) - land use/forestry sector mitigation analysis (Nature Conservation Division - DCN, MEAT) - vulnerability assessment (Land Management Division - DGAT, MEAT)	$3,500	$14,000
1	486/Pentium laptop (Project Coordinator)	$4,000	$4,000
4	Laser Printers	$1,500	$6,000
1	Plain-paper fax	$1,000	$1,000
1	Scanner	$1,000	$1,000
1	Modem/Misc.	$500	$500
5	Word Processing/Spreadsheet software	$1,000	$5,000
	Other Task-Related Software (models, GIS, etc.)		$5,000
	Discretionary Equipment Budget		$3,500
	TOTAL COST		**$40,000**

ANNEX IV: TRAINING PROGRAMME

Since this is a capacity and institution building project, training activities are a significant component at various levels. The training component will take full advantage of ongoing GEF/UNDP initiatives such as the sub-regional Maghreb project and the African regional project, as well as CC:TRAIN and CC:FORUM. The training effort is composed of the following elements:

- **Output-Oriented Training Workshops**. For each of the principal project outputs, training workshops will be organized in Tunis varying from 3 days to 2 weeks in length, depending on the nature of the material. Provisionally, three trainings workshops are envisioned:

  1. *GHG Inventories.* Topics should include the IPCC inventory methodology, use of the GGIS software, lessons learned from other inventories, and how to deal with data gaps, inadequacies, and inconsistencies.
  2. *GHG Mitigation.* Issues will likely include cost-benefit analysis, multi-objective assessment, criteria for evaluation, modeling and analysis tools, bottom-up and top-down approaches, an overview of available mitigation technologies and policies, and a review of past mitigation studies and lessons learned. The USCSP Mitigation Handbook and material from previous USCSP mitigation workshops can be used to provide a general "curriculum".
  3. *Climate change vulnerability and adaptation assessment.* Training should cover the IPCC Common Methodology, other Vulnerability Assessment Guidelines (e.g. IPCC Technical Guidelines, USCS Guidance Document, and lessons learned from previous and ongoing vulnerability assessments (e.g. the UNDP/GEF Maldives project).

A fourth training workshop to assist in the development of national strategies and implementation of technologies and policies may be desirable as well.

Training workshops should include participation of all relevant and implicated governmental and non-governmental agencies. International consultants should be recruited to assist in workshop development and delivery; the international counterpart institution and CC:TRAIN and CC:INFO should be called upon to assist in this regard.

- **Orientation.** The PC will undertake a three-week, in-depth orientation tour to supplement his/her technical expertise and familiarity with ongoing climate change activities, methodologies, and tools in North Africa, Europe and/or the USA. It will include meetings with governmental, non-governmental, academic and research organizations.

- **Study Tours/International Courses.** Project funds will be available to enable project staff to attend relevant training courses abroad. Such training courses should be directly related to the project objectives. These are difficult to specify at present, since they depend on other ongoing international efforts. Examples include training mitigation and vulnerability workshops conducted as part of the US Country Studies Program on Climate Change; climate workshops conducted as part of CC:TRAIN; the SEI/ACTS Climate and Africa project; the GTZ program; and others.

- **National Workshops**. The national workshops elaborated in the project document, although primarily intended for validation of project outputs and national policy development, can also serve to orient and educate project staff and a wider audience.

- **Training/Transfer of Knowledge and Methods during Project Consultancies.** The project will provide technical experts to assist in conducting analyses and, in doing so, to train national personnel in areas relevant to the climate change and the project objectives. Consultants will be technical experts in areas such as national inventories, GHG mitigation modeling and analysis, individual mitigation strategies such as energy efficiency, renewable energy, forestry, waste management, and transportation policy, coastal zone management, and sea level rise vulnerability. Each international expert should be expected to work in close collaboration with national personnel, and transfer all methods and/or models used.

The NPD will be responsible for elaborating the training programme at project inception and revising it as needs evolve during the course of the project. The training programme should seek to ensure participation of all key project contributors including the MEAT, AME, ANPE, Ministry of Agriculture, and others in each of the above elements (except PC orientation).

ANNEX V.1: JOB DESCRIPTION - NATIONAL PROJECT DIRECTOR (NPD)

Qualifications:

University level degree or equivalent in an area related to energy, environment, climate change, and public policy.

At least 10 years of experience in the areas of research, development, and training, as well as in technical and administrative management of projects, scientific institutions, or related organizations. During this work he or she should have displayed leadership qualities and ability to work with others.

He or she should be attached to an institution that has been undertaking work related to climate change or limiting of GHG emissions.

Tasks:

A. In close cooperation with the Climate Change Committee, the NPD will manage the country's contributions.

B. Review and supervise the overall work plan for the project, closely following the project document, including:

1. Coordinate national activities and the relevant organizations;

2. Contribute to identifying and acquiring the means required for the various activities (financial and human resources);

3. Ensure management of adequate resources, and in close coordination with UNDP and the Climate Change Committee, decide on the division of financial resources between the project activities;

4. Initiate activities to mobilize further resources for the project, its sustainability, and its future expansion into the region;

5. Approve the project coordinator's recommendations regarding project staffing and consultants.

ANNEX V.2: JOB DESCRIPTION - PROJECT COORDINATOR (PC)

Qualifications:

University level degree or equivalent in an area related to energy, environment, climate change, and public policy.

At least 5 years of experience in the areas of research, development, and training, as well as in technical and administrative management of projects, scientific institutions, or related organizations. During this work he or she should have displayed leadership qualities and ability to work with others.

Be capable of working in Arabic, French, and English, both for writing and speaking.

Possess experience working with climate change issues, and familiarity with the concepts, methods, and challenges inherent in GHG inventory, mitigation, and vulnerability analysis.

Tasks:

A. Develop and implement the overall work plan for the project, closely following the project document, including:

1. Recruit and recommend candidates for the project team

2. Organize support for implementation of project activities (e.g., training, publications, documentation, and information dissemination)

3. Manage the day-to-day operations of project staff and consultants

4. Undertake regional and global contacts and communications that serve the purpose of the project.

B. The Project Coordinator (PC) will ensure liaison between the Project Office and UNDP, and other relevant actors.

ANNEX VI: INTERNATIONAL ADVISORY PANEL MEMBERSHIP LIST

A preliminary contact list for the Advisory Panel is presented below. The organizations marked with an asterisk (*) are also taking part in the CC:FORUM consultative process. The list will be completed and updated prior to project implementation.

1. UNITED NATIONS DEVELOPMENT PROGRAMME

Contact: Inger Andersen
Regional GEF Coordinator, Regional Bureau for Arab States, UNDP
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Phone: (212) 906-6199
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Contact: Richard Hosier
Senior Technical Advisor, Climate Change, GEF/UNDP
Room FF-1080
304 East 45th Street
New York, NY 10017
Phone: (212) 906-6591
Fax: (212) 906-6998
E-mail: richard.hosier@undp.org

2. UNITED NATIONS ENVIRONMENT PROGRAMME *

Contact: Michael Short
Programme Officer, Climate Unit, UNEP
P.O. Box 30552
Nairobi, Kenya
Phone: 254-2-623451
Fax: 254-2-623410
E-mail: shortl@unep.no

3. THE WORLD BANK *

Contact: Ken Newcombe
Chief, Global Environment Coordination Division
The World Bank
1818 H Street, N.W., Room S-2141
Washington, D.C. 20433
Phone: (202) 473-6010
Fax: (202) 676-0483
E-mail: knewcombe@worldbank.org

4. **UNEP COLLABORATING CENTRE ON ENERGY AND ENVIRONMENT (UCCEE)***

Contact: John Christensen, Head of Centre
Riso National Laboratory
P.O. Box 49
DK4000 Roskilde
Denmark
Phone: 4 46 32 22 88
Fax: 45 46 3219 99
E-mail: ucc-joch@risoe.dk

5. **UNITED STATES COUNTRY STUDIES PROGRAMME (USCSP)***

Contact: Robert Dixon, Director
United States Country Studies Programme
600 Maryland Avenue, Suite 200
Washington, D.C. 20024
Phone: (202) 426-1464
Fax: (202) 426-1540

6. **STOCKHOLM ENVIRONMENT INSTITUTE**

Contact: Michael Chadwick, Executive Director
Stockholm Environment Institute
Box 2142, S-103 14
Stockholm, Sweden
Phone: (46-8) 723-0260
Fax: (46-8) 723-0348

7. **GESELLSCHAFT FUR TECHNISCHE ZUSAMMENARBEIT (GTZ)***

Contact: Holger Liptow
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D-65726 ESCHBORN
Germany
Phone: 49-6196 79 1626
Fax: 49-6196 79 7144
E-mail: gtz415@geod.geonet.de

8. **CLIMATE CONVENTION SECRETARIAT (UNFCCC)***

Contact: Janos Pasztor, Senior Programme Officer
Technical Cooperation and Information System
Climate Change Secretariat
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Fax: 41-22-7883823
E-mail: jpasztor.unfccc@unep.ch

9. **UNITED NATIONS INSTITUTE FOR TRAINING AND RESEARCH (UNITAR)***

Contact: Gao Pronove
Programme Officer, CC:TRAIN
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Fax: 41-22-7331383
E-mail: gpronove.unfccc@unep.ch

10. **THE START NETWORK**

Contact: Hassan Virji
Deputy Director
The International START Secretariat
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11. **THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE**

Contact: Buruhani Nyenzi
IPCC WG-1 Technical Support Unit
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E-mail: bnyenzi@email.meto.govt.uk

12. **SOUTHERN CENTRE FOR ENERGY AND ENVIRONMENT, ZIMBABWE**

Contact: R. S. Maya
Executive Chairman
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Fax: 263-4-739341

13. **ENDA, SENEGAL**

Contact: Youba Sokona
Director, Programme Energie
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Dakar, Senegal
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Fax: 221-22-26-95
E-mail: energy@endadakar.gn.apc.org

14. **UNDP/GEF MAGHREB REGIONAL PROJECT COORDINATOR'S OFFICE, MOROCCO**

Contact: Faouzi A. Senhaji
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des Energies Renouvelables et l'Environnement (GERERE)
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Rabat
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Tel: 212-7-77-74-43
Fax: 212-7-77-81-10
E-mail: faouzi @ UUCP {uunet!endamag.gn.apc.org!faouzi_senhaji}

ANNEX VII: TECHNICAL ASSISTANCE TO BE PROVIDED BY AN INTERNATIONAL COUNTERPART INSTITUTION (SUBCONTRACT)

The counterpart institution should be selected shortly after project commencement, will provide specific assistance with the tasks identified below, and have the following qualifications:

(The Annex VI provides suggestive list of candidate institutions; additional ones can be found through CC:INFO.)

Institutional Qualifications:

An internationally respected, research and policy analysis institute, research group, consulting organization, or university-based program

At least 10 years proven experience in most or all facets of climate change analysis envisioned in this project.

Capability to work in French and English.

Capability to provide staff in Tunis for 1-2 week missions.

Tasks:

A. Undertake a project initiation assistance mission to Tunis to assist the NPD and PC in elaboration and revision of a detailed workplan within the first three months of project start-up.

B. Assist the NPD and PC in the evaluation of sectoral training and information needs.

C. Assist the NPD and PC in the identification and recruitment of qualified international consultants.

D. Provide consulation in the development of training workshops. The insitution will assist the NPD and PC in designing the curriculum and recruiting experts for training workshops envisioned in the project. If appropriate expertise lies within the institution, it can provide some of the required trainers.

E. Assist in reviewing and selecting methods and modeling tools for the mitigation analysis and vulnerability assessment. A wide variety of scenario analysis methods are available for developing the baseline and mitigation scenarios, and a number of approaches can be used for conducting the vulnerability assessment. The counterpart institution should advise the project on their strengths and weaknesses. It should also advise on the need for and ability to conduct complementary macroeconomic assessments to the mitigation analysis

F. Identify and arrange study tours and international workshop opportunities.

G. Provide technical review assistance in report preparation.

H. Assist in other areas as agreed to with the NPD and PC.

Approximate Budget

The total counterpart institution budget of $30,000 should be needed approximately as follows:

1.	**Personnel:** Experts from the counterpart institutions will carry out activities as described in Tasks A-H above.	$20,000
2.	**Travel:** Expenses for mission travel by counterpart institution experts to Tunisia. Funds are assumed to cover approximately three two week missions.	9,000
3.	**Miscellaneous Services** Sundry, reproduction, distribution, and other support costs.	1,000
	TOTAL	**$30,000**

ANNEX VIII: CAPACITY TABLE FOR CLIMATE CHANGE ENABLING ACTIVITIES IN TUNISIA

UNDP/GEF Project TUN/95/G31: Emissions Inventory of Greenhouse Gases, National Strategy and Action Plans for Emissions Reduction, Sea Level Rise Vulnerability Assessment, and Fulfillment of National Communications under the UNFCCC

Enabling Activity	Planning	Inst. Strength	Training	Research	Education
Background Information for National Communication	X	X	X	O	O
Emission inventory					
- CO2 from energy sources	X	X	X	O	O
- CO2 from land use changes	X	X	X	O	O
- CH4	X	X	X	O	O
- N2O	X	X	X	O	O
- other sources and gases	X	X	X	O	O
Mitigation Options	X	X(MAG)	X(MAG)	O	O
Energy related					
- industry	X	X(MAG)	X	O	O
- transport	X	X(MAG)	X	O	O
- residential	X	X(MAG)	X(MAG)	X(MAG)	O
- energy supply	X	X(MAG)	X	O	O
- other	X	X(MAG)	X	O	O
Non-Energy Sources					
- agriculture	X	X	X	O	O
- forestry	X	X	X	O	O
- waste management	X	X	X	O	O
- other	X	X	X	O	O
- sink enhancement	X	X	X	O	O
Vulnerability Assessment					
- agricultural sector	O	O	O	O	O
- forestry	O	O	O	O	O
- coastal zone	X	X	X	X	O
- water resources	X/O	X/O	X/O	X/O	O
- health impacts	O	O	O	O	O
- natural ecosystems	X/O	X/O	X/O	X/O	O
- other impacts	O	O	O	O	O
Adaptation options (stage 1)	X/O	X/O	X/O	O	O
National Plans					
- national plan (mitigation)	X	X	O	O	O
- national plan (adaptation)	X	X	O	O	O
- other elements?	X	X	O	O	O
Formulation of National Communication	X	X(MAG)	O	O	O
- inventory	X	X	O	O	O
- mitigation options	X	X(MAG)	O	O	O
- vulnerability and adapt.	X	X	O	O	O
- information on research and observation	X	X	O	O	O
- information on education	O	O	O	O	O
- other relevant information	X	X	O	O	O

(MAG) = UNDP/GEF Project "Capacity Building in the Maghreb to Respond to the Challenges and Opportunities created by National Response to the Framework Convention on Climate Change"

Key to Table

X	=	Areas to be covered by the proposed project
Other abbrev.	=	Areas already covered by other projects or programs; the following acronyms are used: ADB = Asian Development Bank ALG = ALGAS Project CCT = CC:TRAIN GEF = Other Regional or Country Specific GEF "Enabling" Project GTZ = German Agency for Technical Cooperation OEC = OECD/IPCC Programme UNE = UNEP-GEF Country Case Studies UNR = UNEP-RISO Greenhouse Gas Abatement Costing Studies US = U.S. Country Studies Program
"X(ADB)"	=	Some preliminary activities have already been undertaken (by ADB), but completing activities presented in the proposed project are needed to finalize the task.
0	=	Remaining ability gaps for which additional funding from GEF or other sources might still be requested
"0(ADB)"	=	Some preliminary activities have already been undertaken, but completing activities not undertaken by the proposed project might be needed to finalize the task
NA	=	Non-applicable or nonsensical entry (e.g coastal vulnerability assessment for land-locked country)