**SECTION 1: PROJECT IDENTIFICATION**

1.1 **Title of Sub-Program:** Climate Change – Enabling Activities

1.2 **Title of Project:** Mauritania: Preparation of the Second National Communication Under UN Framework Convention on Climate Change (UNFCCC)

1.3 **Main Project Number:** IMIS: GFL-2328-2724-4769  
PMS: GF-2010-04-06  
**Sub-Project Number:** IMIS: GFL-2328-2724-4845  
PMS: GF/2010-04-73

1.4 **Geographical Scope:** Mauritania:

1.5 **Implementation:** Direction de l’Environnement  
Ministere du Developpement Rural, de L’Hydraulique et de l’Environnement  
Republique Islamique de Mauritanie  
BP 170 Nouakchott  
Mauritania  
Tel: 222-529 0115  
Fax: 222-5250741  
Email fall_baye@yahoo.fr

1.6 **Duration:** 36 Months  
Commencing: June 2005  
Completion: May 2008

1.7 **Cost of Project:** (Expressed in US Dollars)

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<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
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<tr>
<td>GEF Trust Fund:</td>
<td>146,500</td>
<td>130,500</td>
<td>128,000</td>
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<td>Govt. In-Kind Contribution:</td>
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**Total Cost:** 156,500 140,500 138,000 435,000

Signature: 
For the Government of Mauritania

Signature: 
For UNEP

Hon. Sidi ould Didi  
Minister of Economic Affairs and of Development

Date: ____________________

David Hastie  
Chief, Budget and Financial Management  
Service-UNON

Date: ____________________
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1.8 Project Summary

Decision 2/CP.7 of the COP highlights the importance of developing and strengthening of institutional, scientific, technical, informational and human capacity of non-Annex I Parties, which is a pre-requisite for effective implementation of the Convention. This project will lead to the preparation of the Second National Communication including a national inventory of anthropogenic emissions by sources and removal by sinks of all GHGs not controlled by the Montreal Protocol, and a general description of steps envisaged to implement the Convention. This project, while addressing urgent and immediate domestic issues related to climate change, will take full consideration of the capacity buildings needs of Mauritania in various thematic areas as highlighted in decision 2/CP.7, and hence capacity building elements are incorporated in all proposed activities.
Country : Islamic Republic of Mauritania

Project Title : Mauritania: Preparation of Second National Communication under United Nations Framework Convention on Climate Change (UNFCCC)

GEF Focal Area : Climate Change

Country Eligibility : Mauritania is a Party to the UNFCCC and its Kyoto protocol

GEF Funding : US$ 405 000

Government Contribution (in-kind) : US$ 50 000

GEF Implementing Agency : UNEP

In-Country Executing Agent : Direction de l’Environnement Ministere du Developpement Rural et de l’Environnement Republique Islamique de Mauritanie BP 170 Nouakchott Mauritania Tel : 222- 529 0115 Fax : 222- 5250741 Email fall_baye@yahoo.fr

GEF Operation Focal Point : EL Hadrami ould Bahneine, Director of Environment

UNFCCC Focal Point : Baye Fall, Climate Change Unit Coordinator Direction de l’Environnement, MDRE

Estimated Starting Date : June 2005

Project Duration : 36 months
## Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ALGAS</td>
<td>Asia Least Cost Greenhouse Abatement Strategy</td>
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<td>CDM</td>
<td>Clean Development Mechanism</td>
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<tr>
<td>COP</td>
<td>Conference of the Parties</td>
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<td>EST</td>
<td>Environmentally Sound Technology</td>
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<td>GCM</td>
<td>General Circulation Model</td>
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<td>GCMS</td>
<td>Global Climate Monitoring System</td>
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<td>GHG</td>
<td>Greenhouse Gas</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GEF</td>
<td>Global Environmental Facility</td>
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<td>GNP</td>
<td>Gross National Product</td>
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<td>GTS</td>
<td>Global Telecommunications System</td>
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<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<td>MAWG</td>
<td>Mitigation Analysis and Strategy Working Group</td>
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<td>NGO</td>
<td>Non-Governmental Organization</td>
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<td>NHMS</td>
<td>National Hydro-Meteorological Service</td>
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<td>NSCC</td>
<td>National Secretariat on Climate Change</td>
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<td>OGRF</td>
<td>Oil and Gas Refining Facility</td>
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<td>PMT</td>
<td>Project Management Team</td>
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<td>PAC</td>
<td>Project Advisory Committee</td>
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<td>SCST</td>
<td>State Committee for Science and Technology</td>
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<td>SNC</td>
<td>Second National Communication of Mauritania under the UNFCCC</td>
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<td>TEGs</td>
<td>Technical Expert Groups</td>
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<tr>
<td>UNCBD</td>
<td>United Nations Convention on Biodiversity</td>
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<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
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<td>UNCCD</td>
<td>United Nations Convention to Combat Desertification</td>
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<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
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<tr>
<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<tr>
<td>UNESCAP</td>
<td>United Nations Economic and Social Commission for Asia and the Pacific</td>
</tr>
<tr>
<td>VAAWG</td>
<td>Vulnerability and Adaptation Assessment Working Group</td>
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<tr>
<td>WMO</td>
<td>World Meteorological Organisation</td>
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BACKGROUND AND CONTEXT

Geographic setting
1. Pertaining to both the Maghreb and West Africa geographical sub-regions, Mauritania covers an area of 1,030,000 square kilometres. It shares hundreds km long borders with Morocco in the north, Mali in the East and Senegal in the South, with a smaller border with Algeria in the northeast.

2. With a population of 2.6 million inhabitants in 2003 (among whom 44% are under 15 years old) and a growth rate of 2.9%, most of Mauritania population is concentrated in the cities of Nouakchott and Nouadhibou and along the Senegal River in the Southern part of the country. The urban population is 58% of the total population while the rural population is at 42%.

3. It is considered as one of the most arid Sahelian country with 75% of its territory in the Sahara desert area while its Atlantic coastline stretches over 754 km in the West. Approximately three-fourths of Mauritania is desert or semi desert. As a result of extended, severe drought, the desert has been expanding since the mid-1960s. About 38% of the lands in Mauritania are under permanent pastures, 4% under forests and woodlands and 58% under other uses. The average annual deforestation rate for the period 1990 - 2000 is estimated to be 2.7%.

4. Mauritania has four ecological ecosystems: the Sahara ecosystem, the Sahelian ecosystem, the Senegal River Valley or irrigated ecosystem, and the maritime coastal ecosystem. Although the ecosystems are markedly different from one another, no natural features clearly delineate the boundaries between them. Sand, varying in colour and composition, covers 40 percent of the country area, forming dunes that appear in all ecosystems except the irrigated river Valley.

5. From the climatic point of view, Mauritania is characterized by a generally hot and dry Saharan climate in the north, and a wet and semi-arid sahélian climate in the south. The daily temperatures exceed 38°C over six months of the year and the rainfall ranges from 36 mm to 450 mm in the Southern parts of the country.

6. The decades of 70s, 80s, and 90s has seen a resurgence of drought cycles resulting in a general reduction of precipitations of about 10 to 30% compared to years before, increased land and biodiversity degradation, and massive rural migration.

7. However, fertile alluvial plains, of more than 450 000 hectares, extend along the Senegal River valley where the development of agricultural production activities, in particular recessional and irrigation, are developed.

8. The sea coastline is held at a narrow average radius of 50km, between Nouadhibou in the north and Keur - Macène in the South. It covers an area of 25 000 square km, and, is famous for its halieutic resources potential, its biodiversity and economic wealth.

Mauritanian economy
9. Mauritania, with its very low per capita income and GDP of US$ 396 in 1998 (about 75,000 Ouguiya) is classified as one of the world poorest country. Mauritanian economy depends mainly on its rural sector, the most important source of food-supply where employment is more than 50% of the working labour. Yet, the rural sector does not even constitute 1/5 (one fifth) of the 1998 GDP with its two major components (agriculture and livestock). These are essentially extensive but characterised by a very low productivity.
10. Until mid-1980s, mining was the largest contributor to GDP (12%) and source of export earnings but as prices for iron and copper ores dropped in world markets, mining share decreased as percent of GDP, although mining operations remain the largest non-governmental employer. In the meantime, fishing industry has grown rapidly accounting for 54 percent of foreign exchange and approximately 14 percent of GDP. Fishing is a key sector of the economy and employs 27,000 people.

11. Employment in agriculture and livestock sector shares the highest rate even though it is the least productive, as Mauritania remains one of the West African poorest in terms of agricultural output. In the 1960s, livestock and crop production represented 35 to 45 percent of GDP. In mid-1970s, 20 percent of total population farmed and 60 to 70 percent were involved in livestock herding. In 1986 Mauritania produced about one-third of its grain needs, up from 3 to 8 percent during 1983-85 drought years.

12. Currently, the informal sector of services contributes 44% of Mauritania’s GDP. Agriculture contributes 25%, while the industrial sector accounts for 31% of GDP. The key industries in Mauritania are fish processing and mining of iron ore, gypsum, gold and copper. The main exports from Mauritania are iron ore, fish and fish products, and gold. Some promising prospective features in the export business are still expected starting mid-2005 to boost the economy with the discovery of oil and gas offshore Mauritanian coast.

13. In spite of the authorized efforts and the encouraging performance (with an economic growth rate increase from 1.7% in 1992 to 4.9% on average over the period 1993-1998) certain constraints continue to hamper the country’s development. Indeed Mauritanian economy remains still fragile because of its limited productive basis, its dependence upon two export products (iron and fish), its weak administrative capacity, the focus of the private sector upon commercial activities and cash crop, the weakness of the banking system, the high cost of production factors (energy, transport, etc.) and the high level of poverty.

14. Rural activity is impacted by rigour of climatic conditions, environmental degradation, the high costs of irrigation infrastructures, the weakness of extension services and credit system intended to support private initiatives. Lastly, the recurring droughts have had strong effect on natural resources, production systems and the workers.

15. In addition, according to the last census, the rate of illiteracy passed from 61.5% in 1988 to 47% in 2000. The living conditions also improved positively; access to drinkable water for example more than tripled, passing from 12% in 1988 to 41% in 2000.

16. A key impact of climate change in Mauritania could be more severe and prolonged droughts that would seriously affect the dry land or rain-fed agricultural sector and the fisheries industry.

Agriculture, land use and forestry
17. Mauritania has less than 500 square kilometre of irrigated land and the country is generally prone to drought. The main agricultural crops are rice and sorghum supplemented by dates, millet and maize. Livestock farming is also widely practiced especially by nomadic groups. Crop farming and livestock sectors account for 8% and 78% of rural employment, respectively. This means a significant proportion of the population would be vulnerable to any negative effects of climate change on the country’s rangelands.

18. Mauritania is not self-sufficient in food production. Only 1% of the whole country gets enough rain for agricultural activities. The main cultivated crops are: rice, wheat, dates, maize, millet and various root crops. Irrigated production systems have been introduced as adaptation measure to drought impact in the 70s. Such adaptation policy to improve national food production could not be possible without the support of foreign aids.
19. Herding is an essential sector to the Mauritanian economy. It highly contributes to GNP (15%). Livestock was estimated at more than 15,279,000 units in 2000 (all categories combined).

20. Other vulnerabilities include increased pests and disease incidences due to abnormal wet conditions, destruction of livestock, crops, and animal feed by floods and decline in recessional agriculture. Since women in Mauritania are involved in most agricultural activities, they are likely to be equally vulnerable to climate change impacts on agriculture.

21. Mauritania is a Saharan and Sahelian country whose vegetation and forest resources are sparse due to repeated droughts. The country’s climate is desert, mostly hot, dry and dusty. It has a total forestland cover of about 3.5 millions hectares. Mauritania has one of the richest fishing potential in the world with abundant fish and aquatic resources.

22. As regard to land use, a drastic rural migration has been taking place with an accelerated urbanisation of the main cities. At the same time, production systems (in agriculture, extensive herding, and forestry products) have changed to satisfy domestic needs altering natural resources management.

**Mining and industry**

23. Mauritania has rich underground minerals reserves comprising iron ore, gypsum, copper and phosphate that are commercially exploited beginning 1960's. The exploitation of gold, sulphur and coal reserves is also in progress.

24. The National industrial company for mining (SNIM) is the main operator. In addition, the SNIM has 3 other subsidiary companies involved in the metallurgic sector: SAFA Company (Arabic Company for iron ore and metal stain), COMECA (Atlantic Mechanical Company) and SAMIA (Arabic Company for metallurgy-industries).

25. The new discovery of petroleum and natural gas in Mauritania offshore give a new perspective beginning 2005. Two petroleum fields are estimated to have 200 million barrels of oil; yet, the actual gas reserves are more important and are estimated at 30 billion barrels equivalent. The petroleum exploitation is expected to start at the mid or the end of year 2005 and could reach the production of 60,000 barrels per day.

**Energy supply and demand**

26. Biomass is the main source of household energy in Mauritania. Another important source is imported oil. Scarcity of biomass fuels would affect women, since they would have to travel longer distances to collect firewood. In turn, the depletion of trees as sinks could lead to more dramatic variation in temperature and precipitation resulting in a further destabilisation of the environment. 95 % of household energy consumption drawn from firewood is under threat. Electricity generation in Mauritania is from two sources. Fossil fuels and hydro based electricity generated from Manantali hydro-dam, launched in December 2002.

27. This dam water table is highly sensitive to climate change. Frequent and prolonged droughts would lead to the reduction of electricity generation from hydropower, which would result in additional generation from fossil fuels (oil). This would have direct implications on emission of greenhouse gases.

28. Transportation represents the most important sector of the economic activities as far as fuel consumption is concerned. Such consumption represents 48% of the whole country’s consumption of petroleum.
29. Fossil fuels used for electricity production ranks second after transportation. SOMELEC is the main government enterprise supplying electricity to 21 cities using diesel power plants. The capacity has been increased to 94.1 MW based on 2 additional generators of 8 MW each, at Nouakchott power plant. The power plant is connected to the OMVS hydroelectric line of Manantali, which came into function in 2002. The Convention of the Senegal River Organisation (OMVS) states a share of 16% to Mauritania out of 200 MW total productions.

30. SNIM (Mauritanian Mining Company) is another State enterprise that controls, with its decentralized power plants, 72.6 MW in Zouerate and 17 MW in Nouadhibou.

31. The household energy consumption for cooking, heating and other handcraft activities are totally dependent on firewood even in urban and semi-urban areas.

32. The yearly estimated demand for firewood increased to 1,150,000 cubic meters that is 1.6 times higher than the whole yearly production of entire forest potential, and 10 times higher than accessible forest sites. The energy balance sheet of the country still includes more than 80% of its traditional way for heating from forest supply. Efforts to reduce the urban demand for firewood through butane gas supply or "improved stoves" ("foyers améliorés") have been hampered by both effect of increasing population and the traditional cooking requirements.

Water resources

33. Water resources are inextricably linked with climate in Mauritania, so the prospect of global climate change has serious implications on freshwater resources in the country. The three main sources of freshwater in the country are rainfall, ground water and the Senegal River. In addition there are hundreds of water catchments devices comprising dikes and dams in the interior of the country.

34. Groundwater resources are impacted by prolonged droughts and changes in land cover and land use, in a complex interaction of human activity and population growth rates, climate and environmental responses.

35. Parts of Mauritania are also prone to flooding, and climate change could increase the frequency and intensity of floods in the country. Mauritania experienced serious floods in early 2002 due to torrential rains and storms, which led to a serious food crisis reducing the number of meals for many households from two per day to one. The floods also lead to loss of land, homes, livestock and damage to crops. Other vulnerabilities in the water sector include reduced freshwater availability, drainage congestion and increased river erosion. Women would be more vulnerable to potable water scarcity since they would have to travel longer distances to fetch fresh potable water. Wetland ponds like Kankossa, Libheir, Aleg, Male favour animal husbandry all year long in areas rich of pasture.

Fisheries and coastal resources

36. Mauritania’s coastal waters are among the richest fishing areas in the world, but over exploitation by foreign vessels threaten this key source of revenue. Mauritania has a 754km long coastline. A significant proportion of the population lives along the coast.

37. During the rainy season, storms are common in the coastal areas of Mauritania. Climate change could increase the frequency and intensity of storms. This may result in displacement of people, loss of agricultural land and produce, and, destruction of infrastructure among others.
Health

38. Life expectancy in Mauritania is about 54 years for the entire population, 50 years for the male and 53 years for the female population. The infant mortality rate is about 105 per 1000 live births, while the under-5 mortality rate is 151 per 1000 children (1998). It is estimated that skilled medical staff attends to only 58% of the births in Mauritania. About 63% of the population have access to health facilities within 5km and 78 % within 10 km. An estimated 8% of the children of less than 5 years suffer from severe malnutrition. About 37% of the population have access to improved and safe water supply, while 33% of the population have access to improved sanitation.

Poverty

39. Mauritania has a GNP per capita of US$396. With regard to the international poverty line, 28.6% of the population live below US$1 per day. The figure increases to 68.7% when those under US$2 per day are considered. Farmers and non-farm rural workers exhibit poverty rates of above 60%, indicating that the rural population is poorer than other segments of the population. In single parent families, incidence of poverty is three times higher among female-headed households. The vulnerability is derived from the fact that the illiteracy levels among women are higher since women receive less schooling. They therefore have numerous difficulties in finding employment.

40. The poor are more vulnerable to climate change since they do not have sufficient incomes to prepare and protect themselves from the adverse effects of climate change. In floods, the poor are usually displaced due to the temporary nature of their homes. The poor are also more susceptible to water borne diseases, since they rely on untreated water, which could get contaminated during floods. Adaptation measures for the poor have not been dealt with exhaustively in Mauritania, and have been included in the preparation of the NAPA.

Transport and infrastructure

41. Mauritania has 7660 km of highways of which paved highways total 866 km and unpaved roads, 6794 km. Mauritania has ferries that operate across the River Senegal. The country also has a number of ports and harbours. The type of housing made of clay or dry grass is very vulnerable to climate change.

42. Roads and associated infrastructure are vulnerable to changes in climate patterns, for example storms and flooding. Heavy rains and floods damage seasonal roads that are critical in the marketing of agricultural produce in rural areas, an activity mostly undertaken mostly by women.

43. Possible response measures include construction of specially reinforced roads, bridges, culverts and improved drainage systems. In addition, storms and/or very heavy rains can damage telephone and electricity infrastructure while changes in sea level could affect ports and harbours and interfere with ocean freight.

Data and information

44. The present National System of data collection, compilation, dissemination and storage relating to climate is organised through ASECNA (Air-Security National Agency), SAM (Mauritanian Aircraft Enterprise) and the Agricultural meteorology Office at the Agriculture National Department. A National Meteorology Unit has been recently created but not yet operational.
45. The networking of the meteorology observations covers the Sahelian region. 70% of this equipment is in the south of the country, below the 18th parallel. The synoptic stations were created back in the 30’s and their present location does not correspond anymore to the international standard and norms. The network density has decreased to 10%. Phase II has enabled an inspection of these equipment and assessment of their status. 13 synoptic stations exist along with 8 rainfall posts for measurement of SAM "and more than 60 for AGRHYMET". Much of this equipment is not in use due to lack of operating resources and qualified staff. Likewise, atmospheric observations are also stalled since 1993.

46. Mauritania does not have a network of maritime observation stations. As for the aeronautical stations, only those of Nouakchott and Nouadhibou are operational.

47. The existing agro-meteorology network in the Senegal River Valley region is under supervision of SONADER and has not been operating since 1989.

48. The climate data include radiation, hydrometrical, and upper circulation, litho meteoric. This information is observed in the synoptic stations, and partially in the human health resorts according to the level of equipment.

49. Two data processing institutions exist: the SAM climate office database and the statistics and forecast office related to AGRHYMET. This database is all stored in hard copy documents, therefore vulnerable to the effects of humidity and predators.

50. The climatic observations system of Mauritania suffers from insufficiency of human resources, lack of measuring instruments, lack of means of communication, insufficient resources for the weather activities and lack of personnel motivation.

51. Mauritania has an office of statistics in each ministerial department, including DPCSE, AGRHYMET, and ONS.

52. The observation measurements on the ground are all non-functional, even non-existent in the majority of the stations. Moreover, the current site of these instruments of observation does not meet any more the international standards due to urban settlement, and animal mobility,

53. Several regional centres of excellence such as the Organization of OMVS, the AGRHYMET, the University of Dakar, and ASECNA maintain a database.

**National environment policy**

54. The Parliament of the Republic adopts ecological laws and legislation, while the Government determines the state policy for nature protection, co-ordinates and directs environment protection activities. Numerous laws and governmental resolutions govern the use of natural resources and environment protection in Mauritania.

55. Mauritania is a Party to the following United Nations Conventions:
   a. Convention on Biological Diversity (ratified on August 16, 1996)
   b. The Convention of Basle on the transboundary control of the movements of dangerous wastes and of their elimination (adhesion on August 16, 1996)
   c. The United Nations Convention to Combat Desertification (ratified in August 7, 1996)
   d. Vienna Convention on the Protection of the Ozone Layer (acceded to on May 16, 1994)
   e. Montreal Protocol on the Substances that Deplete the Ozone Layer (acceded in May 26, 1994)
   f. The RAMSAR Convention on wetlands of international importance particularly as habitats of wild fauna (adhesion on February 22, 1982)
56. In accordance with the country’s obligations for these conventions and protocols, relevant National Strategies and Action Plans on Nature Protection, Environment Hygiene, Biodiversity Conservation, Combat of Desertification, National Programme on measures to reduce the consumption of ozone-depleting substances were developed and accepted as the guiding documents.

57. Projects and National Programmes are financed both by the Government and with the support of international agencies, including GEF, UNDP, UNEP, the World Bank, Asian Development Bank, Capacity-21, TACIS, etc.

58. The Government of Mauritania established several committees and networks to deal with climate change and/or related activities. These include The State Committee on Nature Protection, National Committee on Climate Change, National Action Plan for Adaptation (NAPA) Network, NAPA Steering Committee and NAPA implementing committee. All these bodies include the following institutions: Ministry of Rural Development and Environment (DE, DA, and Agrhymet), Ministry of Water and Energy (DE), Ministry of Interior (DATAR, DPC), Ministry of Equipment and Transport (ASECNA), Ministry of Fishery (DMM), University of Nouakchott, and NGOs. While the Director of Environment chairs all these committees, the Director of National planning unit chairs the steering committee. The Ministry of Rural Development and Environment coordinate these committees.

59. The Government of Mauritania established the National Environment Action Plan (Plan d’Action National pour l’Environnement, PANE) that is in charge of supposedly monitoring and evaluating environmental policies and programs. It is an organ with no precise mandate as such and certainly duplicating the DENV organic prerogatives. It was operating as an UNDP initiative with no institutional link with a Government line authority.

60. CNED, CTED, and CRED are three other government national and regional bodies sharing the same attributes as PANE, and where DENV acts as the secretariat. Profiles of other institutions are presented in the next section. This confusing situation has prevailed during the INC preparation and there was no such committee to facilitate project implementation. During Phase II and more recently in NAPA preparation there has been tremendous improvement that has brought about better work atmosphere among the stakeholders. The SCN would consolidate this NAPA achievement.

61. The Direction of Environment (DENV) is the main executive body on environment protection in Mauritania. It oversees the state ecological control activities of ministries, departments, enterprises, institutions and the compliance of the ecological regulations and standards; implementation of state ecological assessment, development of environmental quality standards; issuing and cancellation of permits for limiting air and water pollution, and for wastes disposal; and the development of the national nature protection programmes. The DENV is represented at the regional level by the Délégations Régionales in the Capital and other regions of the country and the local level as well.

62. The Ministry of Health carries out the development of ecological and hygienic norms and protective measures, as well as the approval of environmental quality standards. The fulfilment of specific nature protection functions is assigned to a number of ministries, including the Ministry of Internal Affairs, Ministry of Rural Development and of Environment, The Ministry of Hydrology/Water Resources and Energy, The Ministry of Industry and Mining, State Agency on Industry and Mining (SNIM).
PROJECT OBJECTIVES, ACTIVITIES, OUTPUTS AND INDICATORS

63. Decision 2/CP.7 of the COP highlights the importance of developing and strengthening of institutional, scientific, technical, informational and human capacity of non-Annex I Parties, which is a pre-requisite for the effective implementation of the Convention. This project will take full consideration of the capacity buildings needs of Mauritania in various thematic areas as highlighted in decision 2/CP.7, and hence capacity building elements are incorporated in all proposed activities.

64. The project will build on the outputs of the previous studies under the Initial National Communication project by addressing data gaps, improving some studies, and carrying out new and additional activities as required under the new Guidelines as provided in decision 17/CP.8. In particular, it will build or strengthen the capacity of the country in all areas relating to climate change, not only at the scientific, technical and technological levels, but also at the policy levels.

65. The successful implementation of this project will:
   a. Improve the database of the national greenhouse gases (GHG) inventory by extending its time series up to the year 2000, and reduce the uncertainties associated with the improved emission factors and activity data based on national and regional research and good practice;
   b. Create enabling environment for the introduction of environmentally sound technologies (ESTs), cleaner production practices and processes, including the promotion of endogenous knowledge and technologies, with a view to facilitating GHG emission reduction and sustainable development;
   c. Provide a comprehensive assessment of the vulnerability and adaptive capacity of various socio-economic sectors, using the improved methodologies for “downscaling” and for integrated assessment, and develop a national strategy on adaptation to climate change;
   d. Assess research and systematic observations, including the effects of climate variability and extreme weather events (heat waves, drought, mud flows, etc), as well as early warning systems for climate disasters;
   e. Further enhance public awareness on climate change issues;
   f. facilitate the integration of climate change concerns into national socio-economic planning process, with particular emphasis on enhancing the understanding of the policy and decision makers on the important inter-relationship between climate change and sustainable development.;
   g. Facilitate the assessment of the impacts of various policy measures adopted in Mauritania for addressing climate change issues; and
   h. Identify further constraints and gaps related to financial, technical and capacity needs, so as to facilitate future actions.

Table 1 Matrix of Activities, Outputs and Indicators

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The detailed narrative of the defined activities is given below.
I. National Circumstances

A. Stocktaking exercises

66. After the completion of Phase II and the Initial National Communication in 2002, there has been some delay in starting the Second National Communication process pending the development of new guidelines. During this period, most of the original project team members have left the team to pursue other activities. Thus, it was necessary to reconstitute the project team for this proposed project. Based on the available scientific and technical expertise in the country, a Project Management Team (PMT) and Technical Expert Working Groups (TWGs) were reconstituted under the auspices of the Directorate of Environment (DENV) in consultation with other governmental departments, as well as NGOs. The DENV hosts the National Secretariat on Climate Change for the implementation of the UNFCCC, and conducted a stocktaking exercise to prepare this proposal.

67. Work carried out under previous climate change enabling activities. With the financial support (US$350,000) of the GEF, initial capacity has been developed under the project "Initial National Communication of the Islamic Republic of Mauritania under UNFCCC", which was implemented by UNEP. The Initial National Communication (INC) was presented at the Eighth Conference of Parties (COP-8) in New Delhi in 2001. The key element in the INC was the Inventory of Greenhouse Gases (GHG) for 1990 and 1994 that also included a long-term forecast of GHG emission for the period until 2010. The GHG Inventory was compiled in conformity with the 1996 Revised IPCC Guidelines. The other essential components of the INC were preliminary assessment of vulnerability of the environment and the major economic sectors to climate change, and possible strategies for adaptation. Top-up funding of US$98,000 was later provided by the GEF to undertake Phase 2 of the "Initial National Communication of the Islamic Republic of Mauritania under UNFCCC". This Phase 2 project was aimed at the development of appropriate capacity in priority areas such as technology transfer, observation system, and vulnerability assessment methodologies. The project was completed in 2002. Technical and methodological support was provided by UNEP and the UNFCCC secretariat for participation in regional workshops related to the preparation of national communication.

68. New areas of work were identified on the basis of an analysis of all publications related to climate change in Mauritania (the INC, project reports, information bulletins) and experts’ assessments on the previous activity. The new areas of work are described above.

69. Priorities and synergies with related programmes. The Government of Mauritania has completed or is participating in several projects and activities:
   a. Small Grant Programme of UNDP/GEF that is funding activities in the five GEF focal areas;
   b. The creation of an agency to develop rural electrification (ADER), using primarily photovoltaic devices
   c. The PREDAS improved stoves project, promoting the use of high saving energy consumption
   d. Nouadhibou Wind Park project
   e. Domestic Energy Project of CILSS
   f. The National Action plan for Adaptation to Climate Change
   g. Four major projects: PDI AIM (integrated development of irrigated farming system) of the World Bank, The Community based development project PDRC of the World Bank, Oasis project of IFAD, PADEL (animal husbandry project) of the AFDB;
   h. Biological Diversity Conservation through Participatory Rehabilitation of the Degraded Lands of the Arid and Semi Arid Transboundary Areas of Sénégal and Mauritania Project.
B. Stakeholder consultation

70. To ensure that preparation of SNC proposal identified and engaged the relevant stakeholders that will participate and contribute to the national communication process, Stakeholders consultations were conducted. A questionnaire related to previous climate change activities was developed and distributed to the following stakeholders:
   a. Ministry of Rural Development and of Environment, MDRE
   b. Ministry of Interior, MIPT
   c. Ministry of Hydraulique and Energy, MHE
   d. Ministry of Equipment and Transport, MET
   e. Ministry of Industry and Mining, MIM
   f. Ministry of Health and Social Affairs, MSAS
   g. Ministry of Economic Affairs and of Development, MAED
   h. Ministry of Education, MEN
   i. Ministry of Women, SECF
   j. Oil and Gas Supply State Company, MEPP
   k. Woodside
   l. Donors community
   m. National State University,
   n. NGOs and private sector.

71. The questionnaires were discussed and analysed by the stakeholders at round tables arranged by The Climate Change Unit of DENV. The following matters were taken into account during the round table discussions:
   a. Identification of gaps and uncertainties to avoid duplication and justify the additional assessments to improve information and fill in the gaps;
   b. Identification of new areas of study to cover topics and sectors that have not been addressed under the INC;
   c. Identification of priorities areas to be addressed in the Second National Communication (SNC);
   d. Analysis of other related projects and national activities carried out under other relevant international conventions and the inter-linkages especially in field of vulnerability and adaptation.

C. Institutional framework

72. The Government of Mauritania will utilise the current institutional set-up within DENV that is managing the climate changes enabling activities to prepare the Second National Communication. A National Project Coordinator (NPC) who will coordinate the day-to-day project activities will head the PMT. The PMT and the NPC will be assisted by a Senior Advisor and supported by a Secretary, an accountant (on a part-time basis) and a logistic team (logistic assistant, guardian). The National Climate Committee (NCC), also identified as the NAPA national network (3N), will be acting as steering committee from which a smaller advisory ad-hoc committee (PAC) will be formed to have a closer look over the project management. These committees called the Project Technical Working Groups (TWGs) will form the core project management units. The national GEF Focal Point may decide to maintain the climate change team or, in consultation with UNEP, designate a new team (project coordinator and senior advisor) to coordinate and support these project management activities.

73. These committees, while revisited, will include representatives from key sectors listed above and those of the regional wilayas. Gender equality will be considered in forming these units as recommended by the stocktaking and stakeholders’ consultation. The Departments’ or Ministries’ CC focal points will be motivated to support sustain the institutional set-up.
74. The TWGs will comprise six working groups: (i) GHG Inventory, (ii) Mitigation Analysis, (iii) Vulnerability and Adaptation Assessment, (iv) Environmentally Sound Technologies, (v) Research and Systematic Observation, and (vi) Education, Training and Public Awareness. During the preparation of Initial National Communication, each technical group, headed by a team leader, included a number of part-time experts from relevant sectors, including government agencies, academic institutions, NGOs, and private sector. Each group for this project may also include a number of full-time experts from key sectors. The TWGs are accountable to the NPC. The NPC and the leader of each working group will form the PMT. The leader of each technical working group will develop the work plan of the group’s relevant activity areas and sectors. A general work plan will be developed based on all proposed activities.

75. The Project Advisory Committee (PAC) will be chaired by the Director of DENV, with the NPC as its Secretary. Its members will include representatives from various government agencies, such as MAED, MIPT, MHE, MIM, NGOs and private sector representatives. The PAC will meet every six months to ensure the effective implementation of the project.

76. The institutional arrangement for the proposed project is shown in Figure 1.

77. Adequate and appropriate computer and telecommunication facilities, including internet, will be provided to the PMT and TWGs members so as to enhance their efficiency in undertaking their work. Currently, four computers exist in the project office but only one has access to internet. It is planned to extend this facility to all project team members. The NPC will acquire a vehicle from country budget contribution.

78. The budget line items in 2.1 of Table 1 will be used for payment to members of the team who will do the work, consultantancies, procurement of models, lab studies, and for the use of computer time.

**Major outputs**

79. The major outputs of this proposed activity will be:
   a. national/regional priorities and circumstances analysed and described by experts;
   b. reconstitution of the PMT and TWGs, which will be fully committed to the successful implementation of the project.

80. This activity will last 2 months.

**II. National GHG Inventory**

81. GHG inventory is an important component of national communication, as it forms the basis for mitigation measures. A reliable and accurate GHG inventory will also be very useful for the formulation of any projects under the Clean Development Mechanism (CDM), so that appropriate baseline for emission reduction can be derived.

82. Since the completion of the last GHG inventory in 1999, significant economic development has taken place. The intensity of GHG emissions from various sources has been increasing. This will make the inventory in this proposed project more comprehensive and accurate compared to the previous inventories.

**Previous activities**

83. During the Initial National Communication project, national GHG Inventories for direct greenhouse gases carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) and for indirect greenhouse gases: carbon monoxide (CO), nitrogen oxides (NOₓ) and composed organic volatile non metallic
(COVNM), as well as sulphur dioxide (SO2), have been carried out for the years 1990 and 1994 in five source categories, namely: "Energy", "Industrial processes", "Agriculture" (including enteric fermentation from domestic livestock), "Land-use changes" and "Waste", using the IPCC 1996 Revised Guidelines for National Greenhouse Gas Inventories. These have revealed a number of problems. For example, default emission factors that might be questionable to national conditions were used. This has resulted in significant uncertainties, which were as much as 80% for CH4 emission from agricultural sector, 60% for CH4 emission from waste and 60% for N2O from agricultural, and 50% for CO2 from energy sectors.

**Proposed activities**

84. This activity will aim to improve the GHG inventory by reducing the uncertainties through the use of improved emission factors in the above-mentioned sectors. In particular, it will apply quality assurance and quality control (QA/QC) procedures based on the IPCC Good Practice Guidance and Uncertainty Management in National Greenhouse Gases Inventories, so as to ensure that the results of the inventory will be reliable. The reduction of uncertainties in the national GHG inventory will allow the reconsideration of national priorities for mitigating measures and the effective use of limited financial resources. It will fill in gaps of the previous inventories, especially in the "agricultural" sector.

85. Mauritania will also be participating in activities relating to the improvement of data collection for solid waste and for carbon dioxide emission from transport. At the same time, Mauritania will use the emission factors developed by other countries in the regional project, such as the methane emissions from solid waste, as references and comparison.

86. In accordance with decision 17/CP.8 Guidelines, this proposed project will undertake a number of new activities, as follows:

a. A comprehensive review of the GHG inventory undertaken during the Initial National Communication project in which gaps and shortcomings, including the appropriateness of methodologies used, will be identified and assessed. A long-term programme on the improvement of GHG inventories will be developed.

b. On the basis of the previous inventory, activity data in key socio-economic sectors (i.e., energy, industry, waste, agriculture, forestry, land-use change) from 1995 to 2000 will be updated for carbon dioxide (CO2), nitrous oxide (N2O) methane (CH4), nitrogen oxides (NOx), carbon monoxide (CO), composed organic volatile non metallic (COVNM) and sulphur dioxide (SO2) based on the 1996 Revised IPCC Guidelines. For CO2 inventory, the results obtained from both sectoral and reference approaches will be compared to see if there are any significant differences between the two approaches.

c. The activity data on hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6), will also be collected for the same period where available. It may be noted that the data for these gases, which are controlled by Kyoto Protocol together with CO2, N2O and CH4, have not been collected before.

d. Some sectors will be covered in more depth. For example, in agricultural sector, emissions from enteric fermentation would be investigated at regional levels based on the average annual air temperature specific to each region of the country rather than using the national annual air temperature for the whole country, as it was done in the Initial National Communication. Similarly, the assessment of methane emissions from domestic and commercial wastewater will be specific to each region.

e. In the energy sector, the emissions of GHG and sulphur dioxide will be estimated based on subsectors (i.e., production and transfer of energy, industrial process and construction, transport, commercial/uninhabited sector, inhabited sector, agriculture, forestry and fishery).

f. Proposals for country-specific emission factors of CO2 emission/sink from/to soils in Land-Use Change and Forestry, as well as methane emission factor from agricultural soils, will be developed, with a view to reducing the uncertainties and enhancing the data quality in these areas.
g. While the database for CO₂, N₂O, CH₄ will be updated, a new database for HFCs, PFCs, SF₆, NOₓ, CO, NMHC and SO₂ will be established. An efficient and user-friendly database system will be developed for these gases and their emission factors for ease of archiving, updating and maintenance. To this end, a manual on the database and its use will be developed.

h. Emission trends and forecasts will be projected up to 2020 based on the projected demographic and socio-economic data, as well as the national development plans for various socio-economic sectors, using appropriate statistical techniques and macroeconomic models. Earlier emission trends and forecasts were projected up to 2010.

87. Four workshops will be organized during the activity cycle. These are the planning workshop at the start of the proposed activities, the mid-term review and the end of project review workshops. In addition, a training workshop on IPCC Good Practice Guidance and Uncertainty Management in National GHG Inventories will be held. The trainees of the Regional Capacity Building Project for improving the Quality of GHG Inventories may serve as resource persons for the national workshops. Policy makers will be invited to participate in these workshops, so as to enhance their awareness on the importance of GHG inventory, which should be taken into consideration in national development planning.

88. The above activities will be undertaken by the GHG Inventory Group, which will be reconstituted in view of the fact that some members have already left the original project team. During the process of implementing the proposed activities, it is expected that capacity building or strengthening, including hands-on training, on all aspects relating to GHG inventory, including data collection and analysis, the appropriate application of IPCC methodologies, will be needed, especially for new team members.

89. The capacity building activities may include the participation of the GHG Inventory Group members, especially those new members, in the sub regional, regional and international training workshops on GHG inventory, so as to share experiences and lessons learned with other countries. It is hoped that this team will be maintained in a sustainable manner even after the project cycle.

90. The National Inventory Report (NIR), including identification of further needs and follow-up activities will be prepared collectively by the GHG Inventory Group, with the team leader as the coordinator. The NIR (consisted mainly from worksheets and calculations) will form a reference document attached to the SNC.

91. The budget line items in 3.1 to 3.7 and 3.10 to 3.11 of Table 1 will be used for payment to members of the team who will do the work, consultants, procurement of models, lab studies, and use of computer times. The lines 3.8 and 3.9 will cover expenses related to number of people participating in 3-4 days for each of the 4 workshops, hiring of trainers, and use of facilities.

**Major outputs**

92. The major outputs of this proposed activity will be:
   a. Reconstitution of the GHG inventory team;
   b. Review of previous GHG inventory;
   c. New inventory data for CO₂, N₂O, CH₄, HFCs, PFCs, SF₆, NOₓ, CO, NMVC and SO₂ up to 2000;
   d. Updated and improved GHG inventory database;
   e. Proposals for estimating factors for CO₂ emission/sink from/to soils in "Land-Use Changes and Forestry" sector;
   f. Proposals for estimating methane emission factor from agricultural soils;
   g. Proposals for estimating emission trends and forecasts for the period up to 2020;
   h. An updated GHG inventory report, including technical annexes that detail the inventory procedures and calculations, that will be published;
The reports of the workshops including major papers presented; and
j. Strengthened human, scientific, technical and institutional capacity.

III. General Description of Steps

A. Vulnerability and adaptation

Previous activities

93. The previous activities in the “Initial National Communication of Mauritania under the UNFCCC” and its Phase II projects have included a preliminary assessment of vulnerability to CC of the ecosystem, and the key economic sectors with a view to determining the priority options of mitigating the negative consequences of climate change within the context of national circumstances. However, the preliminary assessment was undertaken based on the hypothetical scenarios with a temperature increment of +1, +2 and +3°C, respectively, and the elementary scenario based on empirical relationship between global annual temperature and regional annual/seasonal temperatures and precipitation, as well as General Circulation Models (GCMs) outputs for the doubling of CO₂. There was no adequate disaggregation of scenarios within territories of the country. In addition, both scenarios and assessment contained high level of uncertainty. As the GCMs keep improving, and the more up-to-date GCMs outputs derived from the new IPCC emission scenarios are currently available, there is a need to construct detailed climatic scenarios on which the new vulnerability assessment should be based, so that appropriate adaptation strategy and measures can be developed.

94. Moreover, the previous studies have not taken into consideration the potential impacts of climate change on national development strategies, plans and programmes. The appropriate adaptation options, even though such issues have been raised for the first time during the process of the preparation of the Initial National Communication have not been well articulated. These aspects will be one of the top priority areas to be addressed in this proposed project.

95. Within the scope of the “Initial National Communication of the Republic of Mauritania under the UNFCCC, Phase II” project, some scientific and methodological elaboration for assessment of vulnerability and adaptation of the key economic sectors of the country, have been carried out. For example:
   a. Methodological approaches have been developed for vulnerability assessment of water resources based on various scenarios for agriculture and water resources development under the conditions of climate change;
   b. Methods of assessment for changes in the productivity of various crops have been selected;
   c. Downscaling method has been developed for using GCM outputs in order to reduce the level of uncertainty of climatic scenarios, and the methodology for assessing the probability of extreme air temperature values and total precipitation rate under various climate change scenarios has also been developed;
   d. Assessment of the impact of climate change on the level of heat loads and climatic comfort within the territory of Mauritania has been carried out with the use of bio-climatic methods; and
   e. Some relationships between climate change and desertification processes within Mauritania, as well as possible measures for reducing their negative effects and adaptation strategies have been studied.

96. Current climate changes in Mauritania within the recent 60-70 year periods have been assessed with the use of the established methodologies and approaches. Climatic scenarios (with an increase of average air temperatures by 1, 2 and 3°C for the evaluation of sensitivity of water resources in the river basins and the crops productivity to the changes of main climatic parameters have been considered. Thus, methodological bases have been developed for assessment of climate change impacts on water resources, including agricultural production. These methodological approaches will
be used for further vulnerability assessment and adaptation analysis in other key socio-economic sectors within the framework of the preparation of the SNC.

Proposed activities

97. It is proposed to undertake the following activities in this component:
   a. Assessment of the climate variability and climate change in Mauritania, including their trends;
   b. Development of detailed climatic scenarios, mapping of climate change indicators using the new climatic scenarios corresponding to the latest GHG emission scenarios (SRES IPCC) for 2030, 2050 and 2080, including the method of statistical interpretation (“downscaling”) of the outputs of GCMs to make them more specific to Mauritania;
   c. Trend analysis and construction of scenarios for agriculture sector development;
   d. Assessment of extreme values of required probability for various climate change scenarios, mapping of extreme values, identification of the most vulnerable areas;
   e. Assessment of evaporation from irrigated land under various climatic scenarios, types of soil and their salinity and groundwater level, and selection of criteria for assessment;
   f. Assessment of the quantity of water resources in the zone of their formation (glaciers, snow cover, volumes and temporal run-off structure);
   g. Vulnerability assessment of water resources in the zone of their consumption, including underground water and temporal run-off structure. In particular, it is proposed to use the WEAP (Water Evaluation and Planning) which is an integrated model to simulate water demands and supplies;
   h. Vulnerability assessment of agro-climatic resources (sums of efficient temperatures, seasonal sums of precipitation, etc.) under various climatic scenarios;
   i. Vulnerability and impact assessment of agricultural sector, including the assessment of average productivity of various crops based on various climatic scenarios (e.g., carbon dioxide concentration in the atmosphere), the degree of land degradation and water supply; as well as the impact of climate variability and extreme weather factors on crop and livestock productivity;
   j. Vulnerability and impact assessment of human health, including the impact of extreme weather events;
   k. Vulnerability and impact assessment of industry and municipal services, including the impact of extreme weather events and water shortage; and
   l. Vulnerability and impact assessment of biodiversity and natural ecosystems (i.e., flora and fauna, including forest, desertification processes, etc.)

98. The vulnerability and adaptation assessment will be undertaken using appropriate methodologies that may better be able to reflect national situation. These include IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations (Carter et. al. 1994); the UNEP Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies (Feenstra et al., 1998); the International Handbook on Vulnerability and Adaptation Assessments (Benioff et al., 1996); Developing Socio-Economic Scenarios for Vulnerability and Adaptation Assessments; Methodologies and Tools to Evaluate Strategies for Adaptation to Climate Change (UNFCCC, 2000); the MAGICC/SCENGEN Climate Scenario Generator: Version 2.4, Technical Manual (Wigley et al., 2000); and the Compendium of Decision Tools to Evaluate Strategies for Adaptation to Climate Change (May, 1999), and other regional methodologies where appropriate.

99. Recommendations on zoning for agriculture needs will be developed. Risk zones will be identified and appropriate maps will be constructed using GIS.

100. Based on the vulnerability and adaptation assessment (e.g., vulnerability indicators, risk zones identification, adaptation ability indicators in various provinces and districts), a draft National Adaptation Strategy to Climate Change for key socio-economic sectors will be developed. The Strategy will include:
a. the review of both analysis of measures and technologies for minimizing damages and for mitigating negative consequences of climate change;
b. the development of interactive mechanism between key socio-economic sectors, and their sub-sectors, as well as between public and private sectors;
c. development of special information materials (e.g., maps, diagrams, decision matrices) for policy makers;
d. the list of the top priority measures recommended for inclusion in sustainable development strategy; and
e. analysis of barriers and necessary activities for integration of adaptation measures in the mid- and long-term national development plans.

101. The draft *National Adaptation Strategy to Climate Change* will be reviewed by the PMT and PAC and then in a national workshop with the participation of all relevant stakeholders in both public and private sectors before its submission to the National Secretariat on Climate Change for review and approval. In particular, policy makers and the public, including NGOs and press media, will be involved throughout the process. The adoption of such a National *Adaptation Strategy to Climate Change* will facilitate the development of future legal instrument on disaster preparedness and reduction.

102. This activity will also include development of proposals for a research programme concerning assessment of impact and measures of adequate adaptation to climate change, based on an analysis of the above activities, identification of gaps and unresolved problems.

103. Three workshops will be organized during the activity cycle. These are the planning workshop at the start of the proposed activities, the mid-term review and the end of project review workshops. The end of the project review workshop will include the presentation of the draft *National Adaptation Strategy to Climate Change*. All key stakeholders will be invited to participate in these workshops, so as to enhance their awareness on the impacts of climate change in Mauritania and the importance of developing adaptation measures to minimize the impacts of climate change to sustainable development.

104. The above activities will be undertaken by the Vulnerability and Adaptation Assessment Working Group (VAAWG), which will be headed by the team leader of the previous study, with support of new team members. The VAAWG will be responsible for preparing the report on Vulnerability and Adaptation including the draft *Adaptation Strategy*, which will form an integral part of the SNC. The relevant experiences and findings from NAPA will be input into this process.

105. Although initial capacity for the vulnerability and adaptation assessment has been developed, *institutional strengthening and technical capacity building* in these areas are the pre-requisites of successful implementation of this work. In particular, training workshop on the application of integrated assessment methodologies, including use of models such as WEAP will be organized at the early project stage with the assistance of both national, and, where appropriate, regional and international consultants. In order to broaden the experiences of the VAAWG, selected members will be sent to participate in relevant sub-regional, regional and international training workshops, such as those organized by the National Communication Support Programme when opportunities arise.

106. In addition, the capacity for the technical group members to identify, assess, develop, monitor and evaluate vulnerability and adaptation measures and projects, including targeted research projects, for multilateral and bilateral funding, will also be strengthened.

107. Further constraints and specific financial, technical and institutional needs for capacity building on vulnerability and adaptation during the implementation of this proposed project will be identified and highlighted.
The budget line items in 4.1 to 4.9 and 4.11 of Table 1 will be used respectively for payment to members of the team who will do the work, consultants, procurement of models, lab studies, and use of computer times. The line 4.10 will cover expenses related to number of people participating in 3-4 days for each of the 3 workshops, hiring of trainers and use of facilities.

**Major outputs**

109. The major outputs of this proposed activity will be:
   a. A comprehensive report on vulnerability and impact assessment;
   b. A draft *National Adaptation Strategy to Climate Change including identification of adaptation options based on cost-benefit analysis*;
   c. The reports of the workshops including major papers presented;
   d. Strengthened human, scientific, technical and institutional capacity.

**B. Programmes to mitigate climate change**

**Previous activities**

110. In the Initial National Communication project, some evaluations of potential GHG emission reduction in energy sector, industrial processes, agriculture and waste have been undertaken. 24 priority activities for GHG emission reduction in Mauritania were identified. These include the increase in efficiency of energy generation and use in key sectors of economy, upgrading of industrial and agricultural technologies, as well as further development of renewable energy sources (6 projects). During the Phase II project, a preliminary economic assessment of the efficiency of approximately 9 projects in various economic sectors has been undertaken.

111. However, the results of these evaluations should be regarded as preliminary, as they were based on an assessment of the certain specific activities and projects in various sectors under national economy development for the period 1995-2010, rather than an overall and integrated assessment based on programmatic and modelling studies. As such, the results do not give a clear overall picture on the least-cost options and the overall emission reduction potential in all the key socio-economic sectors. Thus, there is a need to improve the earlier results based on some acceptable analytical frameworks and methodologies.

**Proposed activities**

112. Thus, one of the first priorities in this proposed activity is to identify and assess the analytical tools and methodologies that are available for evaluating mitigation options and measures for GHG emission reduction. The following literature will be consulted: (a) *Technologies, Policies and Measures for Mitigating Climate Change (IPCC Technical Paper I)*; (b) *Greenhouse Gas Mitigation Assessment: A Guidebook* by the U.S. Country Studies Programme; and (c) *Climate Change 2001:Mitigation (Contribution of Working Group III to the Third Assessment Report of the IPCC)*.

113. A number of models have been available for undertaking such analysis. These include "expenses-release" model, macro-economic models based on economic efficiency (cost-benefit or cost-efficiency analyses), general equilibrium models, MARKAL (Market allocation) - a partial equilibrium bottom-up energy system technology optimisation model.

114. The choice of these models and the training that is required for applying these models will be one of the essential components of this proposed activity. It is necessary to take into account the uncertainty, as well as the socio-economic and ecological risks in climate change policy when these models are applied. Further improvement or research on these models based on the local conditions
and situations may be needed. The results of the modelling studies will be compared with the previous results where possible.

115. The emission reduction forecast in the Initial National Communication project was undertaken up to the year 2010. With the improved GHG data and the improved emission forecast for the period up to 2020, the emission reduction forecast for the same period will be undertaken for the following sectors: Energy, Industrial processes, Land-Use Change and Forestry, and Waste.

116. Macro-economic modelling based on the inputs from more comprehensive national economic development parameters, such as the rates of development and the structure of GDP, and social development parameters, will be used for the forecast. The validity of the methodology used for forecasting will be verified based on comparison with earlier forecasted results and the actual emission reduction data for the same year. The effects of sectoral mitigation measures on the general and sectoral GHG emission reduction trends will be assessed.

117. A number of key gaps and uncertainties of the previous studies that have been identified will be rectified in this proposed project. These include:

a. Improvement of mitigation analysis by disaggregating activities at the sectoral level. This will include:
   • Data collection and analysis on energy end-use and energy distribution in various socio-economic sectors (e.g., buildings, construction, equipment; internal and street lighting, transport diversification, industry, etc);
   • Assessment of effects of sustainable land management by involving local communities;
   • Reduction of methane losses during gas transportation and utilisation of captured fugitive methane emissions in oil and gas operations;
   • Quantification of fluorine gas emissions and its reduction in industrial sector and associated economic cost;
   • In-depth cross-cutting analysis of available project proposals, including the identification of economic opportunities and conditions for technology transfer; and
   • Facilitation of interaction between policy makers and other stakeholders.

b. Assessment of mitigation measures in energy efficiency and conservation in industrial, commercial and residential sectors. This will include:
   • A review of existing national energy policy on these sectors;
   • Analysis of present priorities and existing target for GHG emission reduction measures, their cost and feasibility;
   • Expansion and updating of existing database of technologies for GHG emission reduction;
   • An assessment of impact of the potential technological intervention on emission reduction; and
   • Identification of standard procedures, practice and mechanism for verifying project performance and emissions reduction.

c. Development of legal and economic instruments for mitigation measures, which will include the analysis of existing legal and economic systems and their barriers to emission reduction; identification and analysis of appropriate legal (e.g., law and legislation) and economic (e.g., tax incentives) instruments for stimulation of actions and investments; simplification of development process, including submission and acceptance of the projects proposals; development and performance of projects; raising of public awareness, including the awareness of policy makers with a view to facilitate an enabling environment for their acceptance and adoption of certain appropriate mitigation measures.

118. A list of national measures to mitigate climate change will be developed, and reviewed by the PMT and PAC and a national workshop with the participation of all relevant stakeholders for both public and private sectors before it will be submitted to the National Secretariat on Climate Change for review and approval. In particular, it is important to involve the policy makers and the public, including NGOs and press media, throughout the process. The adoption of such measures on GHG
emission reduction will facilitate the development of future legal instrument on emission control, which, in turn, will attract the development of CDM and other investment projects. To this end, a list of mitigation projects, including those related to the rational use of traditional energy resources and the development of renewable energy sources, will be proposed for financing in accordance to Article 12 (4) (7) of the UNFCCC, decisions 7/CP.7, 10/CP.7 and 17/CP.8.

119. Three workshops will be organized during the activity cycle. These are the planning workshop at the start of the proposed activities, the mid-term review and the end of project review workshops. The end of the project review workshop will include the presentation of the priority national measures to mitigate climate change. In particular, the policy makers and the private sector will be invited to participate in these workshops, so as to enhance their awareness on the importance of GHG mitigation reduction in sustainable development.

120. The above activities will be undertaken by the Mitigation Analysis Working Group (MAWG), which will be headed by the team leader of the previous study, with support of new team members. The MAWG will work closely with the GHG Inventory Group. It will be responsible for preparing the report on Mitigation Analysis that will form an integral part of the SNC.

121. Although initial capacity for the methodology of economic assessment of mitigation measures have been developed, institutional strengthening and technical capacity building in mitigation option analysis will still be very much needed in the process of executing the above-mentioned activities, especially for the new MAWG members. In particular, training workshop on the application of macro-economic models and relevant energy models will be organized with the assistance of both national and, where appropriate, international consultants. In particular, the expertise of the UNEP Collaborating Centre for Energy and Environment based in Denmark will be tapped. In order to broaden the experiences of the technical working group, selected members will be sent to participate in the sub regional, regional and international training workshops and conferences on mitigation measures analysis when opportunities arise.

122. The capacity for the technical group members to identify, assess, develop, monitor and evaluate mitigation projects for multilateral and bilateral funding, including the opportunities that are available under the CDM, will be strengthened.

123. Further constraints and specific financial, technical and institutional needs for capacity building on mitigation options analysis and on the development of mitigation measures during the implementation of this proposed project will be identified and highlighted.

124. The budget line items in 4.9 of Table 1 will be used for payment to members of the team who will do the work, consultants, procurement of models, lab studies, and use of computer times. The line 4.10 will cover expenses related to number of people participating in 3-4 days for each of the related 3 workshops, hiring of trainers and use of facilities.

**Major outputs**

125. The major outputs of this proposed activity will be:
   a. A report that contains the least-cost mitigation options and emission reduction trends and projection up to 2020;
   b. A list of measures to mitigate climate change;
   c. The reports of the workshops including major papers presented;
   d. Strengthened human, scientific, technical and institutional capacity.
V. Other Relevant Information

A. Integrating climate change considerations into social, economic and environmental policies and actions

Previous activities

126. Sustainable development is a new concept in many countries such as Mauritania. Despite the Initial National Communication project in which some publicity on climate change issues had been given in the country due to the mass media news reports, climate change and its relationship to economic development has still not been generally regarded as a major concern in the country.

127. There is a lack of linkage of existing climate change programmes to national sustainable development plans and programmes. Thus, there is an urgent need to integrate climate change considerations into social, economic and environmental policies and actions of the country. In particular, there is an urgent need to develop and enhance technical capacities and skills to carry out and effectively integrate vulnerability and adaptation assessments into sustainable development programmes.

Proposed activities

128. In order to ensure that climate change concerns will be integrated into the sustainable development plans and programmes of the country, it is necessary to raise the awareness of the national planners and policy makers, especially those in the national planning authority, on the impacts of climate change in the country. In particular, the results of the vulnerability and adaptation assessment in various socio-economic sectors must be conveyed to the national planning authorities, so that they can take these into consideration during their national planning process. To this end, training workshops will be organized for national and provincial planners and policy and decision makers from all relevant ministries and government agencies, including the members of national planning authority.

129. There is a need to review and analyse existing national programmes on sustainable development and based on the review and analysis, proposals to integrate climate change concerns into sustainable development programmes for various key socio-economic sectors, including strengthening the cooperation between the public and private sectors, will be developed. Further gaps that need to be addressed in terms of integration of climate change concerns into national sustainable development plan and programmes will be identified.

130. The above activities will be undertaken by the Project Management Team (PMT), which consists of the technical leader of all technical expert groups, and will be in a good position to provide capacity building activities for the national planners, policy and decision makers.

131. The budget line items in 5.1 of Table 1 will be used for payment to members of the team who will do the work, consultants, procurement of models, lab studies, and use of computer times.

Major outputs

132. The major outputs of this proposed activity will be:
   a. Proposals to integrate climate change considerations into social, economic and environmental policies and actions;
   b. The reports of the training workshops that include the papers presented; and
   c. The participants at the stocktaking workshop raised these issues. This also relates to the
issue of the technology transfer-clearing house (TTCLEAR) to be established under the framework for effective and meaningful actions to enhance the implementation of the Article 4.5 of the Convention. The criteria for assessment and selection of priority technological needs including the cost-effectiveness of the technologies and the opportunities for their application will be revised, and linked to future activity on technology development and transfer, as part of the national strategy for sustainable development.

133. In order to facilitate the development and transfer of ESTs, it is important to have an enabling environment, including the development of appropriate legal and economic instruments. This proposed project will examine the existing instruments with a view to making recommendations to improve them.

134. A database for ESTs, including both mitigation and adaptation climate change technologies, and their potential for development and transfer will be established. To this end, it is proposed to adopt the EST information system (ESTIS) that has recently been developed by UNEP’s International Environment Technology Centre (IETC) based in Osaka, Japan (see: http://www.entis.net). Training will be needed on the use of system, and then a national system will be built based on ESTIS. Other regional and international technology information databases will be assessed and adopted where appropriate. A study of technology information networking with relevant regional and international organisations will be an important activity for this proposed project.

135. The Environmentally Sound Technologies Working Group (ESTWG) will undertake the above activities, which will be responsible for preparing the report on environmentally sound technologies transfer.

136. Further constraints and specific financial, technical and institutional needs for capacity building on technology transfer will be identified and highlighted.

137. The budget line items in 5.2 of Table 1 will be used for payment to members of the team who will do the work, consultants, procurement of models, lab studies, and use of computer times.

**Major outputs**

138. The major outputs of this proposed activity will be:

   a. A comprehensive report on technology needs assessment;
   b. A database for ESTs;
   c. Technology information networks;
   d. Strengthened human, scientific, technical and institutional capacity.

**B. Research, systematic observation and early warning systems**

**Previous activities**

139. The past and existing national networks of meteorological and hydrological observation, including the analysis of methodological, technological and technical needs, have been described in the Initial National Communication project (Phase I) and Phase II. The Hydrological observations conducted in Mauritania are based on the principles of “best practices” recommended by WMO. However, due to limited financial resources, it is not possible to upgrade the monitoring equipment and even maintain the equipment at the appropriate technological level. Thus, it may be difficult for Mauritania to maintain the level of “best practices” in the future. It is understood that hardware expansion of the
observation network cannot be provided within the framework of this proposed project, though it is a very serious problem facing Mauritania.

140. Another important issue is the establishment of an information dissemination system in the country, so that the national climatic monitoring data, the IPCC assessment reports, the assessment of climate change in Mauritania and in the West African and Maghreb regions in the future can be better described. The information on extreme weather and climatic events should be widely distributed. Currently, financial, technological and technical constraints have prevented this from happening.

141. Under the Phase II project, the capacity building needs for systematic climate monitoring in Mauritania have been identified. However, further capacity building activities are still needed in the development and maintenance of climate observing systems in Mauritania. In addition, the level of automation in climate monitoring needs to be greatly enhanced.

142. Under the Phase II project, a climate communication campaign has been undertaken. The campaign will be strengthened when funding becomes available, with participation from NGOs, Universities, Research organisations and various ministries of the Government.

**Proposed activities**

143. This proposed project will overcome the gaps and strengthen existing institutional and technical capacity (see Research, Systematic Observation and Early Warning Systems section of the stocktaking report).

144. The following activities are proposed:
   a. Development of the National Information Report on research and systematic observation, including a review of existing and planned programmes and activities in meteorological, hydrological and climatic research and observation, including programmes for monitoring of desertification and ecosystems quality, and other indicators of climate change.
   b. Analysis of existing barriers for development of observation systems and research;
   c. Assessment of the existing system for early warning on extreme weather events (e.g., extreme temperatures and precipitation, droughts, floods, mudslides, avalanches etc.) and methods of seasonal forecasting, including identification of gaps, barriers and development requirements;

145. A national review workshop on research and systematic observation will be organized.

146. The above activities will be undertaken by the Research and Systematic Observation Working Group (RSOWG), which will be responsible for preparing the report on this component that will form an integral part of the SNC.

147. Although there is some existing capacity for research and systematic observation, *institutional strengthening and technical capacity building* in these areas are still very much needed, especially training in research and systematic observation; data collection and analysis; technical upgrading and practical training on climate monitoring, and the establishment of early warning system on extreme climatic events. The participation in sub regional / regional/international workshops on research and systematic observation will be encouraged when opportunities arise.

148. Further constraints and specific financial, technical and institutional needs for capacity building on research, systematic observation and early warning systems will be identified and highlighted.

149. The budget line items in 5.3 of Table 1 will be used for payment to members of the team who will do the work, consultants, procurement of models, laboratory studies, and use of computer times.
Major outputs

150. The major outputs of this proposed activity will be:
   a. A National Information Report on research and systematic observation;
   b. The reports of the workshops including major papers presented.
   c. Strengthened human, scientific, technical and institutional capacity.

C. Development and transfer of environmentally sound technologies (ESTs)

Previous activities

151. Within the framework of the Phase II project, Mauritania has launched three studies in the broad areas of (i) energy: transportation, industry, agriculture (ii) coastal zones; and (iii) climatic observation systems. In total, 9 technology transfer projects have been identified as ways of reducing GHG emissions in selected economic sectors, energy (gas and charcoal), electric power industry, transportation, industries of building materials, and municipal services of the country. The economic efficiency of these projects were assessed. The technology needs for these sectors are very broadly identified and not all sectors have been considered. What could be concluded from Phase II is the following:
   a. the means of energy production are obsolete with high levels of GHG emissions
   b. the climatic observation systems are inefficient and insufficient
   c. not all sectors have been covered.

152. Few newspapers published articles in both languages (French and Arabic) relating to priority technological needs of Mauritania in the field of GHG emission reduction and adaptation to adverse consequences of climate change: economic assessment of technologies that are potentially suitable for Mauritania, and opportunities to transfer them; GHG Inventory in forestry sector, and wastes in the industrial, commercial and residential sectors. Some of these reports would input into the Second National Communication.

Proposed activities

153. These activities will fill gaps in technology transfer issues and programs such as the diagnosis of technology transfer needs in remaining sectors of health, sanitation, and capacity building in the use of models for vulnerability of specific sectors and technology transfer process of the Phase II project.

Previous activities

154. Education, training and public awareness are the key elements for enhancing the understanding of climate change issues among the general public. Indeed, Article 6 (a) of the UNFCCC requires the Parties to, “promote and facilitate at the national and, as appropriate, sub regional and regional levels, and in accordance with national laws and regulations, and within their respective capacities”:
   (i) The development of implementation of educational and public awareness programmes on climate change and its effects”; (ii) “Public access to information on climate change and its effects”; (iii) “Public participation in addressing climate change and its effects and developing adequate responses”; and (iv) “Training of scientific, technical and managerial personnel.”

155. Within the framework of Initial National Communication, a team of national experts had participated in workshops held in all four ecosystems of the country (e.g., Kiffa, Rosso, Atar, and Nouakchott). Many lectures were delivered in regional universities and institutes, which were attended by local managers, experts and representatives of mass media. Three workshops aimed at improvement of awareness on climate change issues were held in Nouakchott, with participation of representatives of all sectors of economy, ministries, private sector and NGOs.
156. Many publications related to the Initial National Communication project have been widely disseminated throughout the Republic and made known to government bodies, ministries, departments, private sector and NGOs. These include: (i) Proceedings “Main Outputs of National GHG Emission Inventory” (1999); (ii) the “Initial National Communication of the Republic of Mauritania under UNFCCC (2001); (iii) the report on “The Initial National Communication of the Republic of Mauritania under UNFCCC, Phase 2”.

157. Special booklets intended for secondary and higher educational institutions (universities and institutes) have also been published and disseminated.

158. Two pilot projects have been launched with NGOs in Kaedi and Nouakchott. Despite the above preliminary efforts, the general level of public awareness on the complex issues of climate change remains insufficient, even among policy-makers. Thus, it is planned to increase public awareness in this proposed project.

Proposed activities

159. It is proposed to develop proposals for educational and public awareness programme on all major issues relating to climate change and sustainable development. The target audiences will be the general public, including school children and students, policy makers, planners, and private sector. The mass media (television, radio and newspapers) will be used to assist in creating public awareness. In addition, public access to information on climate change and its effects will be promoted.

160. The following specific activities are proposed:
   a. A workshop will be organized for all relevant stakeholders (policy makers, NGOs, community groups, private sector) to raise their awareness on issues relating to climate change and sustainable development;
   b. Development of outreach materials and dissemination of these materials through mass media. The information provided by IPCC, WMO, IUC/UNEP, UNITAR and the UNFCCC secretariat through their web pages would be used as sources of information for outreach activities where appropriate. However, these is a need to translate these materials into French and Arabic before wider dissemination of information;
   c. A CC Web site in Arabic and French devoted to climate change activities in Mauritania will be established. Capacity building for updating and maintaining this Web site is essential in order to ensure its sustainability even after the completion of the project;

161. The above activities will be undertaken by the Information Outreach Working Group (IOWG), which will be specifically formed to undertake the activities of this component. It will be responsible for preparing the report on this component that will form an integral part of the SNC.

162. As a new working group which was not formed in the previous studies, the IOWG will have very limited capacity in conducting educational and public awareness campaigns, and hence capacity building in this area will be needed. Appropriate national or regional consultants will be engaged to develop the public awareness information materials when needed.

163. The institutional and technical capacity for education, training and public awareness will be enhanced. In order to broaden the experiences of the all project-working group, selected members will be sent to participate in relevant sub regional, regional and international training workshops relating to Article 6 of the UNFCCC.

164. Further constraints and specific financial, technical and institutional needs for capacity building on education, training and public awareness will be identified and highlighted.
165. The budget line items in 5.4 of Table 1 will be used for payment to members of the team who will do the work, consultants, procurement of models, lab studies, and use of computer times.

**Major outputs**

166. The major outputs of this proposed activity will be:
   a. Proposals for educational and public awareness programmes at national and provincial levels;
   b. Outreach materials in Greniqand Shahar;
   c. CC Web site in Arabic and French devoted to climate change activities in Mauritania
   d. Strengthened human, scientific, technical and institutional capacity.

**D. Education, training and public awareness**

**Previous activities**

167. Education, training and public awareness are the key elements for enhancing the understanding of climate change issues among the general public. Indeed, Article 6 (a) of the UNFCCC requires the Parties to “promote and facilitate at the national and, as appropriate, sub regional and regional levels, and in accordance with national laws and regulations, and within their respective capacities”:
   a. The development of implementation of educational and public awareness programmes on climate change and its effects;
   b. Public access to information on climate change and its effects;
   c. Public participation in addressing climate change and its effects and developing adequate response; and
   d. Training of scientific, technical and managerial personnel.

168. Within the framework of Initial National Communication, a team of national experts had participated in workshops held in all four ecosystems of the country (e.g., Kiffà, Rosso, Atar, and Nouakchott). Many lectures were delivered in regional universities and institutes, which were attended by local managers, experts and representatives of mass media. Three workshops aimed at improvement of awareness on climate change issues were held in Nouakchott, with participation of representatives of all sectors of economy, ministries, private sector and NGOs.

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170. Special booklets intended for secondary and higher educational institutions (universities and institutes) have also been published and disseminated.

171. Two pilot projects have been launched with NGOs in Kaedi and Nouakchott. Despite the above preliminary efforts, the general level of public awareness on the complex issues of climate change remains insufficient, even among policy-makers. Thus, it is planned to increase public awareness in this proposed project.
Proposed activities

172. It is proposed to develop proposals for educational and public awareness programme on all major issues relating to climate change and sustainable development. The target audiences will be the general public, including school children and students, policy makers, planners, and private sector. The mass media (television, radio and newspapers) will be used to assist in creating public awareness. In addition, public access to information on climate change and its effects will be promoted.

173. The following specific activities are proposed:
   a. A workshop will be organized for all relevant stakeholders (policy makers, NGOs, community groups, private sector) to raise their awareness on issues relating to climate change and sustainable development;
   b. Development of outreach materials and dissemination of these materials through mass media. The information provided by IPCC, WMO, IUC/UNEP, UNITAR and the UNFCCC secretariat through their web pages would be used as sources of information for outreach activities where appropriate. However, these is a need to translate these materials into French and Arabic before wider dissemination of information;
   c. A CC Web site in Arabic and French devoted to climate change activities in Mauritania will be established. Capacity-building for updating and maintaining this Web site is essential in order to ensure its sustainability even after the completion of the project;

174. The above activities will be undertaken by the Information Outreach Working Group (IOWG), which will be specifically formed to undertake the activities of this component. It will be responsible for preparing the report on this component that will form an integral part of the SNC.

175. As a new working group which was not formed in the previous studies, the IOWG will have very limited capacity in conducting educational and public awareness campaigns, and hence capacity building in this area will be needed. Appropriate national or regional consultants will be engaged to develop the public awareness information materials when needed.

176. The institutional and technical capacity for education, training and public awareness will be enhanced. In order to broaden the experiences of the all project-working group, selected members will be sent to participate in relevant sub regional, regional and international training workshops relating to Article 6 of the UNFCCC.

177. Further constraints and specific financial, technical and institutional needs for capacity building on education, training and public awareness will be identified and highlighted.

178. The budget line items in 5.4 of Table 1 will be used for payment to members of the team who will do the work, consultants, procurement of models, lab studies, and use of computer times.

Major outputs

179. The major outputs of this proposed activity will be:
   a. Proposals for educational and public awareness programmes at national and provincial levels;
   b. Outreach materials in Greniqand Shahar;
   c. CC Web site in Arabic and French devoted to climate change activities in Mauritania strengthened human, scientific, technical and institutional capacity
E. Information and networking

180. Access to and use of information technology, such as internet, will be essential to ensure efficient exchange and sharing of information both within and outside the country. Information networking is an important component of the proposed project.

181. The following activities will be undertaken:
   a. Participation and contribution to sub-regional and regional information networks on climate change issues, especially those relating to national communications;
   b. Provision of a list of national experts, including their expertise, who have participated in the preparation of the second national communication;

182. The budget line items in 5.5 of Table 1 will be used for payment to members of the team who will do the work, consultants, procurement of models, lab studies, and use of computer times.

Major outputs

183. The major outputs of this proposed activity will be to strengthen human, scientific, technical and institutional capacity in information networking.

F. Capacity building

184. Agenda 21 defines capacity building as “denoting the development of a country’s human, scientific, technological, organisational, and institutional and resources capabilities to address a problem.” As provided in decision 2/CP.7, “Capacity building is a continuous, progressive and iterative process, the implementation of which should be based on the priorities of developing countries.” The COP 7 in November 2001 has adopted a comprehensive framework to guide the implementation of capacity building activities in developing countries, which was annexed to decision 2/CP.7. However, capacity building activities must be country-driven and cost-effective.

Previous activities

185. Although the initial national communication project has provided some opportunities for capacity building in various areas, it is clear that the development of “human, scientific, technological, organisational, institutional and resources capabilities” of Mauritania to address issues relating to climate change is still needed. Indeed, without capacity building at all levels, climate change activities in Mauritania will not be sustainable. In particular, it is important to enhance or promote an enabling environment for activities relating to climate change at all levels. Thus, capacity building will be the major focus of this proposed project, and each proposed activity has included elements for capacity building.

Proposed activities

186. Capacity building activities can be undertaken at different levels - from the project team members to all the stakeholders (including both the public and private sectors). They can also take different forms - from training workshops and short-term fellowships to public awareness campaigns. In pursuing capacity building activities, the options and priorities must be assessed.

187. In view of the large number of multilateral environmental agreements, it would be appropriate to seek to maximise the synergies in implementing the UNFCCC and other global environmental agreements, such as Convention on Biological Diversity (CBD) and United Nations Convention to Combat Desertification (UNCCD) from a sustainable development perspective.
188. A list of measures for capacity building will be developed to guide all capacity building activities in the future. These may include (i) Strengthening existing National Secretariat on Climate Change and sectoral focal points to enable the effective implementation of the Convention and the effective participation in the Kyoto Protocol process, including preparation of national communication; (ii) Developing an integrated implementation programme which takes into account the role of research and training in capacity building; (iii) Strengthening existing and, where necessary, establishing national research and training institutions in order to ensure the sustainability of the capacity building programmes.

189. The budget line items in 5.6 of Table 1 will be used for payment to members of the team who will do the work, consultants, procurement of models, lab studies, and use of computer times.

**Major outputs**

190. The major outputs of this proposed activity will be:
   a. Strengthened human, scientific, technical and institutional capacity at all levels on all issues relating to climate change;
   b. A list of measures for capacity building.

**VI. Constraints & Gaps; Related Financial, Technical & Capacity Needs**

191. After implementation of the above-proposed activities, an in-depth re-analysis is needed to identify the barriers to the implementation of UNFCCC and further COPs’ decisions. Special attention will be paid to constraints and gaps in financial and technical areas that may limit capacity building and strengthening to implement UNFCCC activities on a continuous basis. In line with the above, it is necessary to develop proposals and justify establishment of a National Centre that will facilitate concentration of efforts, financial and human resources, i.e. the whole potential relevant to addressing climate change problems including periodical and qualified preparation of the national communications (Article 12 of the UNFCCC).

192. A sustainable activity will allow Mauritania to present high-quality data on national GHG emissions (Article 12.1 (a) of the UNFCCC) due to continuous activity on clarification and filling-in data gaps in different sectors and application of the latest IPCC methodologies. The project activity on assessment of vulnerability and analysis of adaptive capacity of the country to climate change currently comply with the initial adaptation stage (Article 4.1 (e) of the UNFCCC). Practical steps to prepare pilot projects will accompany development of proposals to apply adaptation measures/demonstration project proposals and propose them for financing.

193. Also, there is a need for continuous assessment of juridical, financial and technological constraints and barriers to implementation of projects to reduce GHG emissions, technology transfer and implementation. An updated information service is required to implement the Article 12.4 of the UNFCCC. The activities may include:
   a. Search, collection and regular updating of information at the national level (technological needs, project proposals);
   b. Establishing and developing liaisons with national and international agencies and institutions in field of technology transfer (administrative and logistic support), which is required in the process of technology transfer and implementation of individual projects, including assistance in development, assessment of economic efficiency and compilation of project proposals according to requirements by investors and international financial institutions;
   c. Securing the sustainability of projects with a view to achieving the global objective of the UNFCCC.
VII. Technical Assistance

194. UNEP, as the GEF Implementing Agency for the project, will be consulted on all aspects during the execution of the project. It will be fully informed of all activities and invited to actively participate in all technical and policy workshops related to the project, so that it can provide useful inputs and contributions to ensure the successful implementation of the project.

195. Technical support from other national, regional or international organizations and consultants will also be sought where and when necessary.

196. Training workshop on the application of integrated assessment methodologies, including integrated assessment modelling (e.g., WEAP, LEAP etc) will be organized at the early project stage with the assistance of both national, and, where appropriate, regional and international consultants. In addition, training workshop on the application of economic models and relevant energy models (including cost-benefit analysis) will be organized with the assistance of both national and, where appropriate, international consultants.

197. The budget lines items in 7.1 and 7.2. will cover expenses related to number of people participating in 3-4 days for each of the training workshops, hiring of trainers and use of facilities. The need to participate in regional workshops will be based on the needs.

VIII. Compilation and Production of Second National Communication (SNC)

198. The document Second National Communication will be compiled, edited and prepared, under the coordination of the PMT. It will involve all members of the TEGs, each of which will prepare the relevant sections/chapters of the SNC.

199. The proposed structure of the SNC is as follows:
   Executive Summary (not more than 10 pages)
   Chapter 1: Introduction
   Chapter 2: National Circumstances
   Chapter 3: GHG Inventory
   Chapter 4: Programmes containing measures to facilitate adequate adaptation to climate change (i.e., Vulnerability and Adaptation Assessment for key socio-economic sectors)
   Chapter 5: Programmes containing measures to mitigate climate change (i.e., mitigation options analysis for key socio-economic sectors)
   Chapter 6: Development and transfer of environmentally sound technologies
   Chapter 7: Research and Systematic Observation
   Chapter 8: Education, Training and Public Awareness
   Chapter 9: Integration of climate change concerns into sustainable development programmes
   Chapter 10: Information and Networking
   Chapter 11: Capacity building
   Chapter 12: Other information considered relevant to the achievement of the objective of the Convention
   Chapter 13: Constraints and Gaps, and Related Financial, Technical and Capacity Needs
   Chapter 14: Conclusions and Recommendations
   Annex: List of projects for bilateral and multilateral funding

200. The SNC will be reviewed by PAC. Based on this review, a revised version will be produced. A workshop, with the participation of PMT, TEGs, PAC, key stakeholders and policy and decision makers, private sector and NGOs, will then be organized to review this revised draft national communication before it is finalized and submitted to the UNFCCC Secretariat. Translation of the SNC into Arabic and English will be needed.
201. The major output of this component will be a comprehensive SNC to be submitted to the UNFCCC Secretariat in 2008.

IX. Project Management

202. The proposed project will be executed by the Direction de l'Environnement (DENV) at the Cabinet of MDRE of the Islamic Republic of Mauritania. The collaborating agencies include: Ministry of Rural Development and of Environment (MDRE), Ministry of Interior (MIPT), Ministry of Hydraulique and Energy (MHE), Ministry of Equipment and Transport (MET), Ministry of Industry and Mining (MIM), Ministry of Health and Social Affairs (MSAS), Ministry of Economic Affairs and of Development (MAED), Ministry of Education (MEN), Ministry of Women (SECF), Oil and Gas Supply State Company (MEPP), National Committee on Environment and Development (CNED), Woodside, Donors National State University, NGOs and private sector. All these agencies form the NCC that will be meeting on a semester basis.

203. As shown in Figure 1, the Project Advisory Committee (PAC), acting on behalf of the NCC, will be overseeing and advising the execution of the project on a quarterly basis. The National Project Coordinator (NPC) will co-ordinate the day-to-day project execution activities. The NPC will be supported by the six Technical Working Groups (TWGs), which will include experts from key relevant sectors including government agencies, academic institutions, NGOs, and private sector, as necessary. The TWGs will be meeting twice a month to assess work progress. All these project entities will be providing notes to the next reporting level.

Institutional framework for project implementation

204. The Government of the Mauritania has entrusted the Direction de l'Environnement (DENV) to fulfil the country’s commitments to the UNFCCC. Accordingly, a National Secretariat on Climate Change for the implementation of the Convention has been established in DENV. The National Secretariat on Climate Change co-ordinates climate change activities between various ministries and organizations, including private sector, within the country. These include the Ministry of Rural Development and of Environment (MDRE), Ministry of Interior (MIPT), Ministry of Hydraulique and Energy (MHE), Ministry of Equipment and Transport (MET), Ministry of Industry and Mining (MIM), Ministry of Health and Social Affairs (MSAS), Ministry of Economic Affairs and of Development (MAED), Ministry of Education (MEN), Ministry of Women (SECF), National State University, NGOs and private sector.

205. The structure of DENV of Mauritania comprises the following services: Environment, Nature Protection, and the Projects Unit. These services and units are responsible for providing the state authorities and economic entities with climatic information, weather forecasts, environmental pollution level, as well as undertaking centralised data compilation.

206. Thus, DENV disseminates information on climate change issues to raise public awareness on the issues. DENV is also the focal point for the UN Convention to Combat Desertification (UNCCD) as well as the GEF Operational Focal Point. DENV was the executing agency for the initial national communication project. It will be the executing agency for the second national communication project. Indeed, a project office has been maintained within the DENV even after the completion of the initial national communication Phases I and II projects.
Figure 1. Institutional arrangement for the preparation of the Second National Communication.

### Project financing and budget

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>GEF contribution, US$</th>
<th>GOV’T contribution US$</th>
<th>Total US$</th>
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<tbody>
<tr>
<td>Component II: National Circumstances</td>
<td>20 000</td>
<td>2 400</td>
<td>25 400</td>
</tr>
<tr>
<td>Component III: National GHG Inventories</td>
<td>65 000</td>
<td>3 000</td>
<td>71 000</td>
</tr>
<tr>
<td>Component IV: General description of Steps</td>
<td>137 000</td>
<td>2 000</td>
<td>142 000</td>
</tr>
<tr>
<td>Component V: Other relevant Information</td>
<td>45 000</td>
<td>1 000</td>
<td>49 000</td>
</tr>
<tr>
<td>Component VI: Constraints and Gaps</td>
<td>13 000</td>
<td>3 000</td>
<td>16 000</td>
</tr>
<tr>
<td>Component VII: Technical Assistance</td>
<td>15 000</td>
<td>3 000</td>
<td>18 000</td>
</tr>
<tr>
<td>Component VIII: Compilation and Production of Second National Communications</td>
<td>15 000</td>
<td>3 000</td>
<td>18 000</td>
</tr>
<tr>
<td>Component IX: Project Management</td>
<td>75 000</td>
<td>11 600</td>
<td>92 600</td>
</tr>
<tr>
<td>Component X: Monitoring and Reporting</td>
<td>20 000</td>
<td>3 000</td>
<td>23 000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>405 000</td>
<td>20 000</td>
<td>455 000</td>
</tr>
</tbody>
</table>

As the proposed activities are standard enabling activities required for the preparation of national communication, so the incremental cost for undertaking these activities are also full cost, and hence no incremental cost analysis is required.
208. The requested GEF funding of **US$405,000** reflects the current real needs and concerns of the country in order to fulfil its commitments for the preparation of its SNC. Despite some past and ongoing activities, including capacity building activities, further capacity building, including training, for the project team members are still needed, so that they can carry out the task in a sustainable manner.

209. This budget has been realistically estimated by some of the key previous project team members who are based in the DENV during a number of stocktaking sessions, and thoroughly reviewed by the NSCC before it was fully endorsed by the national GEF Operational Focal Point.

210. The contribution of the Government of Mauritania, which will amount to US$ 50,000 over the three-year period of the project, will include some logistical support, basic communication and office facilities, library and information facilities, and others.

**X. Monitoring and Evaluation**

**Budget**

211. The full template for the budget is shown in Annex 1 according to the Standard UNEP Format.

**Cash Advance Requirement**

212. Initial cash advance of US$73,250 (representing 50% of Year 2005 budget) will be made from UNEP upon signature of the project document by both parties. This is intended to cover all expenditures to be incurred by the PNC during the first three months of the National Project Implementation. Subsequent cash advances will be made quarterly, subject to:

a. Confirmation by the PNC at least two weeks before the payment is due, that the expected rate of expenditure and actual cash position necessitate the payment, including a reasonable amount of cover “lead time” for the next remittance The presentation of:

   - A satisfactory financial report showing expenditures incurred for the past quarter. (see format in Annex 3)
   - Timely and satisfactory progress reports on projects implementation (Annex 4)

b. The balance of the payment will be made on completion of the National Project and after all final reports and accounts are submitted and approved.

**XI. Institutional Framework and Evaluation**

**Institutional framework**

213. This Project will be implemented under the general guidance and direct supervision of the Director, Division of GEF Coordination, UNEP.
214. All correspondence regarding substantive matters should be addressed to:

For UNEP:

Ahmed Djoghlaf  
Assistant Executive Director, UNEP  
Director, Division of GEF Coordination  
UNEP  
P.O. Box 30552  
Nairobi, Kenya  
Tel :  
Fax: 254-20-624041  
Email : ahmed.djoghlaf@unep.org

With a copy to:

Mahendra Kumar  
Technical Specialist Climate Change  
Division of GEF Coordination  
UNEP  
P.O. Box 30552  
Nairobi, Kenya  
Tel: 254-20-623489  
Fax: 254-20-624041/623162  
E-mail: mahendra.kumar@unep.org

For Mauritania:

Baye Fall  
Coordinateur du Projet  
Direction de l’Environnement (DENV),  
Nouakchott Mauritania  
Tel : 222 - 524 03 54  
Fax: 222 - 525 83 86  
Email: fall_baye@yahoo.fr

Financial and budgetary matters should be addressed to:

David Hastie  
Acting Chief  
Budget and Financial Management Service, UNON  
P.O. Box 67578  
Nairobi, Kenya  
Tel :  
Fax: +254-20-623755  
Email:david.hastie@unep.org
Evaluation

215. The Directorate of Environment (DENV) will maintain systematic overview of the implementation of the project by means of monthly project monitoring meetings or other form of consultation, as well as by regular quarterly progress reports. The Directorate of Environment (DENV) at the end of the project will prepare a terminal/final report of the project. Following development of detailed work-plan, the following steps will be undertaken: review of the project, review/definition of defects, gaps, identification of problems that might impede the project implementation. Furthermore, the review is aimed to define potential partners and sources of information for the project. The implementing agency will oversee implementation of contracted project activities. With this purpose, project Coordinator assisted by the Senior Advisor and in cooperation with the National Co-ordinating Committee will prepare work-plan for project implementation.

XII. Reportings

Quarterly Progress Reports

216. Beginning June 2005 and thereafter, the Directorate of Environment (DENV) shall submit Quarterly Progress Reports (as at 31 March, 30 June, 30 September and 31 December), to the UNEP/GEF Division Director, with copies to the Chief, BFMS, on the progress in project execution as per Annex 4 of the project document.

Terminal

217. Within 60 days of the completion of the project, the Directorate of Environment (DENV) shall submit a Terminal Report in the UNEP format (Annex 6) to the Director, Division of GEF Co-ordination with copies to the Chief, Budget and Financial Management Service and the Chief, Programme Co-ordination and Management Unit. The report should indicate the principal factors, which have determined the success or failure of the project in meeting the objectives set forth in the project document. This report will serve as a source of initial lessons for the country’s experience and can recommend follow up activities.

Financial Reports (National Project Expenditure Accounts)

218. Details of the National Project expenditures will be reported by the Directorate of Environment (DENV) in line with National Project budget codes, as set out in Annex 1, on a quarterly basis as at 30 September, 31 December, 31 March, 30 June and on completion of the National Project. All expenditure accounts will be dispatched to UNEP within 30 days after the period to which they refer certified by a duly authorized official of the Directorate of Environment (DENV) and counter signed by the signatory to the project document.
219. Within 180 days of the completion of the National Project, the Directorate of Environment (DENV) will supply UNEP with a final statement of account in the same format as Annex 1, but covering the full period of the National Project, certified by a recognized firm of public accountants. In particular the auditors should be asked to report whether, in their opinion:
   a. Proper books of account and records have been maintained;
   b. All National Project expenditures are supported by vouchers and adequate documentation;
   c. Expenditures have been incurred in accordance with the objectives outlined in the National Project document.
   d. The expenditure reports provide a true and fair view of the financial condition and performance of the project.

220. The Directorate of Environment (DENV) shall retain, for a period of three years following completion of the National Project, all supporting documents relating to financial transaction under this National Project. If requested by UNEP the Directorate of Environment (DENV) will facilitate an audit by the UN Board of Auditors and/or UN Audit Service of the accounts of the National Project by granting reasonable access to the supporting documents relating to the financial transactions under this National Project during normal working hours and providing it is at no extra cost to the Directorate of Environment (DENV).

221. Any portion of cash advances remaining unspent or uncommitted by the National Executing Agency on completion of the National Project will be returned to UNEP within one month of the presentation of the final statement of accounts. In the event that there is any delay in such disbursement, the Directorate of Environment (DENV) will be financially responsible for any adverse movement in the exchange rates.

XIII. Cash Advance Requirements

222. A statement of advances of cash provided by UNEP will be submitted quarterly (in the format shown in Annex 2) at 31 March, 30 June, 30 September, and 31 December.

XIV. Other Terms and Conditions

Inventory of Non-expendable equipment purchased against UNEP projects

223. The Directorate of Environment (DENV) shall maintain records of non-expendable equipment (items costing US$1,500 or more as well as items of attraction such as pocket calculators, cameras, computers printers etc. costing US$500 or more) purchased with UNEP funds (or with Trust funds or Counterpart funds administered by UNEP), and submit an inventory of such equipment to UNEP twice a year following the format contained in Annex 5, attached to the quarterly progress report, indicating description, serial number, date of purchase, original cost, present condition, location of each item. The purchase of equipment must be accompanied with quotations from at least three licensed companies with clear clarification for selecting a particular vendor.

224. Non-expendable equipment purchased with funds administered by UNEP remains the property of UNEP until its disposal is authorized by UNEP, in consultation with the Directorate of Environment (DENV). The Directorate of Environment (DENV) shall be responsible for any loss of or damage to equipment purchased with UNEP funds. The proceeds from the sale of equipment (duly authorized by UNEP) shall be credited to the accounts of UNEP, or of the appropriate trust fund or counterpart funds.
225. The Directorate of Environment (DENV) shall attach to the terminal report mentioned in paragraph 155.0, above a final inventory of all non-expendable equipment purchased under this project following the format in Annex 6 indicating description, serial number, original cost, present condition, location and a proposal for the disposal of the said equipment. A duly authorized official of the GEF Co-ordination Division should physically verify the inventory.

**Responsibility for Cost Over-runs**

226. Any cost overrun (expenditure in excess of the amount budgeted in each budget sub-line) shall be met by the organization responsible of authorizing the expenditure, unless written agreement has been received in advance from UNEP. In case where UNEP has indicated its agreement to a cost overrun in a budget subline to another, or to increase the total cost to UNEP, a revision to the project document amending the budget should be issued by UNEP.

**Publications**

227. At the appropriate time, the Directorate of Environment (DENV) will submit to UNEP three copies in draft of any substantive project report(s) and, at the same time, inform UNEP of its plans for publication of that text. Within 30 days of receipt, UNEP will give the Directorate of Environment (DENV) substantive clearance of the manuscript, indicating any suggestions for change and such wording (recognition, disclaimer, etc.) as it would wish to see figure in the preliminary pages or in the introductory texts. It will equally consider the publishing proposal of the Directorate of Environment (DENV) and will make comments thereon as advisable.

228. It may request the Directorate of Environment (DENV) to consider a joint imprint basis. Should the Directorate of Environment (DENV) be solely responsible for publishing arrangements, UNEP will nevertheless receive 10 free copies of the published work in each of the agreed languages, for its own purposes.

**Claims by Third Parties against UNEP**

229. The Directorate of Environment (DENV) shall be responsible for dealing with any claims, which may be brought by third parties against UNEP and its staff, and shall indemnify UNEP and its staff against any claims or liabilities resulting from operations carried out by the Directorate of Environment (DENV). Under this National Project document, except where it is agreed by the Directorate of Environment (DENV) and UNEP that such claims or liabilities arise from negligence or misconduct of the staff of UNEP.

**Disputes**

230. Any dispute, controversy, or claim arising out of or relating to this agreement, or the breach, termination, or invalidity thereof shall be settled by arbitration under the UNCITRAL Arbitration Rules in effect on the date of this agreement.
LIST OF ANNEXES

Annex 1: Budget in UNEP format
Annex 2: Format for Cash Advance Statement
Annex 3: Formats for Quarterly National Project Expenditure Report
Annex 5: Format for Non Expendable Equipment Inventory Report
Annex 6: Format for Terminal Report
Annex 7: Terms of Reference
Annex 1 - Budget

**Mauritania: Preparation for the Second National Communication under UN Framework Convention On Climate Change (UNFCCC)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>Total</th>
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<td>1101</td>
<td>National Projects Coordinator</td>
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<td>12000</td>
<td>12000</td>
<td>36000</td>
</tr>
<tr>
<td>1102</td>
<td>Senior Advisor</td>
<td>12000</td>
<td>12000</td>
<td>12000</td>
<td>36000</td>
</tr>
<tr>
<td>1201</td>
<td>National Consultants (nat. Circ.)</td>
<td>23000</td>
<td>23000</td>
<td>24000</td>
<td>70000</td>
</tr>
<tr>
<td>1202</td>
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<td>5000</td>
<td>0</td>
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</tr>
<tr>
<td>1203</td>
<td>National Consultants (nat. techn. assist.)</td>
<td>20000</td>
<td>20000</td>
<td>30000</td>
<td>70000</td>
</tr>
<tr>
<td>1301</td>
<td>Administrative Assistant</td>
<td>1400</td>
<td>1400</td>
<td>1400</td>
<td>4200</td>
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<td>Administrative support</td>
<td>3300</td>
<td>3300</td>
<td>3300</td>
<td>9900</td>
</tr>
<tr>
<td>1382</td>
<td>Monitoring/ evaluation</td>
<td>0</td>
<td>7500</td>
<td>7500</td>
<td>15000</td>
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<tr>
<td>1383</td>
<td>Independent Financial Audit of the project accounts</td>
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<td>0</td>
<td>1500</td>
<td>1500</td>
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<tr>
<td>1601</td>
<td>Staff travel</td>
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<td>12400</td>
<td>2400</td>
<td>27200</td>
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<tr>
<td>3201</td>
<td>National workshops (Other Relevant)</td>
<td>10000</td>
<td>10000</td>
<td>5000</td>
<td>25000</td>
</tr>
<tr>
<td>3202</td>
<td>National workshops (National GHG)</td>
<td>15000</td>
<td>10000</td>
<td>5000</td>
<td>30000</td>
</tr>
<tr>
<td>3203</td>
<td>National workshops (General Description)</td>
<td>15000</td>
<td>10000</td>
<td>5000</td>
<td>30000</td>
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<tr>
<td>4101</td>
<td>Office Supplies</td>
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<td>1000</td>
<td>1000</td>
<td>3500</td>
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<tr>
<td>4201</td>
<td>Office equipment (computers, etc)</td>
<td>8000</td>
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<td>8000</td>
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<td>5202</td>
<td>Compilation and Production of Second National</td>
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<td>15000</td>
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<td>5301</td>
<td>Communication</td>
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<td>2900</td>
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<td>99</td>
<td>GRAND TOTAL</td>
<td>146500</td>
<td>130500</td>
<td>128000</td>
<td>405000</td>
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Table 1. Proposed activities for the preparation of the Second National Communication (June 2005 – May 2008)

<table>
<thead>
<tr>
<th>Activities in the Second National Communication</th>
<th>Amount, US$</th>
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</thead>
<tbody>
<tr>
<td><strong>II. National Circumstances</strong></td>
<td></td>
</tr>
<tr>
<td>2.1. Analysis and description of national / regional priorities and circumstances (Consultants)</td>
<td>10000</td>
</tr>
<tr>
<td>2.2. Reconstitution of the Project Management: Project Management Team (PMT), Technical Expert Groups (TEGs), including development of Terms of References (TORs)</td>
<td>8000</td>
</tr>
<tr>
<td>2.3. Organization of Project Initiation Workshop</td>
<td>2000</td>
</tr>
<tr>
<td>2.4. Establishment of the Project Advisory Committee (PAC) under guidance of the National Secretariat on Climate Change</td>
<td>0</td>
</tr>
<tr>
<td><strong>III. National GHG Inventories</strong></td>
<td></td>
</tr>
<tr>
<td>3.1. Comprehensive review of the GHG inventory undertaken during the Initial National Communication project. Data collection up to 2000 for CO2, N2O, CH4, NOx, CO, NMVC, SO2 as well as for HFCs, PFCs and SF6</td>
<td>10000</td>
</tr>
<tr>
<td>3.2. Data quality assurance based on IPCC Good Practice Guidance and Uncertainty Management in National GHG Inventory, including key source analysis. Data analysis using sectoral and reference approaches based on 1996 IPCC Guidelines</td>
<td>8000</td>
</tr>
<tr>
<td>3.3. In-depth review of GHG emissions from some sources in agriculture and waste sectors (on provincial level) and energy sector (on sub-sectoral level)</td>
<td>8000</td>
</tr>
<tr>
<td>3.4. Development of factor of carbon dioxide emission and sink from soils in land use change and forestry sector and methane emission from agricultural soils</td>
<td>10000</td>
</tr>
<tr>
<td>3.5. Upgrading and updating of database for CO2, N2O, CH4, establishment and maintenance of database for other greenhouse gases as appropriate</td>
<td>4500</td>
</tr>
<tr>
<td>3.6. Projection of GHG emission trends up to 2020</td>
<td>5000</td>
</tr>
<tr>
<td>3.7. Preparation of the National Inventory Report (NIR), including identification of follow-up activities</td>
<td>2000</td>
</tr>
<tr>
<td>3.8. Organisation of review workshops (in the beginning, in the middle and in the end of project) for the Inventory group and stakeholders. Presentation of the NIR at the end-of-project workshop</td>
<td>6000</td>
</tr>
<tr>
<td>3.9. Organization of training workshop on IPCC Good Practice Guidance and Uncertainty Management of National GHG Inventory</td>
<td>2000</td>
</tr>
<tr>
<td>3.10. Strengthening technical capacity of national experts (inter alia, by trainees of the Regional Capacity Building Project for Improving the Quality of GHG Inventories)</td>
<td>2000</td>
</tr>
<tr>
<td>3.11. Technical capacity building, including participation in the sub regional/regional/international training workshops on GHG inventory (1 trainee for 3 years)</td>
<td>7500</td>
</tr>
<tr>
<td>4.1. Analysis and description of national / regional priorities and circumstances (Consultants)</td>
<td>10000</td>
</tr>
<tr>
<td>4.2. Development of the detailed climatic scenarios, mapping of climate change indicators using new climatic scenarios corresponding to the latest GHG emission scenarios (SRES IPCC) for 2030, 2050 and 2080, including the method of statistical interpretation (“downscaling”) of the outputs of General Circulation Models (GCMs)</td>
<td>8000</td>
</tr>
<tr>
<td>4.3. Trend analysis and construction of scenarios for agriculture sector development</td>
<td>6000</td>
</tr>
<tr>
<td>4.4. Vulnerability assessment, including modelling, where appropriate</td>
<td>24500</td>
</tr>
<tr>
<td>4.5. Climate change impact assessment, including modelling for the following socio-economic sectors:</td>
<td>26600</td>
</tr>
<tr>
<td>4.7. Development of the National Strategy on Adaptation to Climate Change</td>
<td>10000</td>
</tr>
<tr>
<td>4.8. Analysis of the activities 4.1 - 4.7, identification of gaps and unresolved problems. Development of the proposals to a research programme concerning assessment of impact and measures of adequate adaptation to climate change</td>
<td>4000</td>
</tr>
<tr>
<td>4.9. Programmes to mitigate climate change, including:</td>
<td>30000</td>
</tr>
<tr>
<td>4.10. Organisation of review workshops (in the beginning, in the middle and in the end of project) for the vulnerability and mitigation groups and stakeholders. Presentation of the draft National Strategy on Adaptation to Climate Change and the measures to mitigate climate change at the end-of-project workshop</td>
<td>3000</td>
</tr>
<tr>
<td>4.11. Capacity building, including participation in the sub regional/ regional/ international training workshops on integrated assessment modelling / mitigation measures analysis (for 3 years)</td>
<td>15000</td>
</tr>
</tbody>
</table>

Total Amount: 65000 33000 18500 13500
<table>
<thead>
<tr>
<th>V. Other Relevant Information</th>
<th>41250</th>
<th>12750</th>
<th>14000</th>
<th>14500</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1. Integrating climate change considerations into social, economic and environmental policies and actions</td>
<td>3000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>5.2. Environmentally Sound Technologies (ESTs)</td>
<td>10000</td>
<td>3000</td>
<td>3500</td>
<td>3500</td>
</tr>
<tr>
<td>5.3. Research, systematic observations and early warning systems</td>
<td>10000</td>
<td>3500</td>
<td>3000</td>
<td>3500</td>
</tr>
<tr>
<td>5.4. Education, training and public awareness</td>
<td>6000</td>
<td>1000</td>
<td>2500</td>
<td>2500</td>
</tr>
<tr>
<td>5.5. Information and Networking</td>
<td>6250</td>
<td>2250</td>
<td>2000</td>
<td>2000</td>
</tr>
<tr>
<td>VI. Constrains and Gaps; Related Financial, Technical and Capacity Needs</td>
<td>8500</td>
<td>0</td>
<td>2000</td>
<td>6500</td>
</tr>
<tr>
<td>6.1. Constraints, gaps and needs, and activities for overcoming gaps, etc</td>
<td>1500</td>
<td></td>
<td>1500</td>
<td></td>
</tr>
<tr>
<td>6.2. Projects proposed for financing or in preparation for arranging support</td>
<td>3500</td>
<td>1000</td>
<td>2500</td>
<td></td>
</tr>
<tr>
<td>6.3. Opportunities, barriers for implementation of adaptation measures</td>
<td>2000</td>
<td>1000</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>6.4. Country-specific technology needs and assistance received</td>
<td>1500</td>
<td></td>
<td>1500</td>
<td></td>
</tr>
<tr>
<td>VII. Technical Assistance</td>
<td>15000</td>
<td>7500</td>
<td>7500</td>
<td>0</td>
</tr>
<tr>
<td>7.1. Organization of training workshops on application of integrated impact models (WEAP or others) assisted by international consultants and attended by participants from provinces</td>
<td>7500</td>
<td>7500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.2. Assessment of suitability and possible application of economic models, including cost-benefit analysis. Organization of a training workshop with assistance by an international consultant</td>
<td>7500</td>
<td>7500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIII. Compilation, Production of Communication, incl. Executive Summary and Its Translation</td>
<td>15000</td>
<td>0</td>
<td>0</td>
<td>15000</td>
</tr>
<tr>
<td>8.1. Compilation of the Second National Communication</td>
<td>1000</td>
<td></td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>8.2. Organization of a national workshop on discussion and presentation of the SNC, collection of stakeholders comments</td>
<td>500</td>
<td></td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>8.3. Finalization of the project report, preparation of the SNC summary</td>
<td>500</td>
<td></td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>8.4. Translation of the final version of the SNC into English and Arabic languages</td>
<td>5000</td>
<td></td>
<td>5000</td>
<td></td>
</tr>
<tr>
<td>8.5. Publication of the final version of the SNC in English, French and Arabic languages</td>
<td>8000</td>
<td></td>
<td>8000</td>
<td></td>
</tr>
<tr>
<td>IX. Project Management</td>
<td>75000</td>
<td>33050</td>
<td>32500</td>
<td>33600</td>
</tr>
<tr>
<td>9.1. Project Manager</td>
<td>24000</td>
<td>8000</td>
<td>8000</td>
<td>8000</td>
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<tr>
<td>9.2. Senior Advisor</td>
<td>24000</td>
<td>8000</td>
<td>8000</td>
<td>8000</td>
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<tr>
<td>9.3. Secretary</td>
<td>4200</td>
<td>1400</td>
<td>1400</td>
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<tr>
<td>9.4. Accountant (part time)</td>
<td>4200</td>
<td>1400</td>
<td>1400</td>
<td>1400</td>
</tr>
<tr>
<td>9.5. Logistic Assistant (with driving duties)</td>
<td>2850</td>
<td>950</td>
<td>950</td>
<td>950</td>
</tr>
<tr>
<td>9.6. House Keeper /Guardian</td>
<td>2850</td>
<td>950</td>
<td>950</td>
<td>950</td>
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<tr>
<td>9.7. Independent Audit</td>
<td>1500</td>
<td></td>
<td>1500</td>
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</tr>
<tr>
<td>9.8. Staff Travel</td>
<td>7200</td>
<td>2400</td>
<td>2400</td>
<td>2400</td>
</tr>
<tr>
<td>9.9. Equipment (1 Photocopier) including consumables and logistic expenses for 3 year</td>
<td>2300</td>
<td>1300</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>9.10. Communication</td>
<td>1900</td>
<td>500</td>
<td>900</td>
<td>500</td>
</tr>
<tr>
<td>X. Monitoring and Reporting</td>
<td>15000</td>
<td>7500</td>
<td>7500</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>405000</td>
<td>146500</td>
<td>130500</td>
<td>128000</td>
</tr>
</tbody>
</table>
Annex 2 - Format for Cash Advance Statement

Cash advance statement

Statement of cash advance as at: _______________________________________
And cash requirements for the quarter of: _______________________________________

Name of co-operating agency: _______________________________________
Supporting organization: _______________________________________
National Project No: _______________________________________
National Project title: _______________________________________

I Cash statement

1. Opening cash balance as at.......................... US$ _____________________
2. Add: cash advances received:

<table>
<thead>
<tr>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US$..........................</td>
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<tr>
<td></td>
<td>US$..........................</td>
</tr>
<tr>
<td></td>
<td>US$..........................</td>
</tr>
</tbody>
</table>

3. Cash advanced to date
   a) GEF contribution US$ _____________________
   b) Country contribution US$ _____________________
   TOTAL (a+b) US$ _____________________

4. Less: total cumulative expenditures incurred: US$ (____________________)
5. Closing cash balance as at ...........................: US$ _____________________

II Cash requirements forecast

6. Estimated disbursements for quarter ending US$ _____________________
7. Less: closing cash balance (see item 5, above): US$ (___________________)
8. Total cash requirements for the quarter ........: US$ _____________________

Prepared by______________________ Request approved by_______________________
Duly authorised official of cooperating agency/ supporting organisation
Annex 3 - Format of Quarterly Project Expenditure Accounts for Supporting Organizations

Quarterly project statement of allocation (budget), expenditure and balance (Expressed in US$) covering the period from......................to......................

Project No.: ........................................................................
Project title: ........................................................................
Project commencing: ............................................................. Project ending:

(Date)…………….(Date)…………….

Object of expenditure in accordance with UNEP budget codes

<table>
<thead>
<tr>
<th>Project budget Allocation for year</th>
<th>Expenditure Incurred For the quarter</th>
<th>Cumulative expenditures this year</th>
</tr>
</thead>
<tbody>
<tr>
<td>m/m Amount</td>
<td>m/m Amount</td>
<td>m/m Amount</td>
</tr>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
</tbody>
</table>

(4)                             | (5)                                  | (6)                             |
| (7)                            | (8)                                  |                                |

1101 National Project Coordinator
1201 National Consultants
1202 National Consultants
1203 National Consultants
1301 Adm. Assistant
1302 Administrative support
(Accountant - part time) 1
382 Monitoring/ evaluation
1383 Independent Financial Audit
1601 Staff travel
3201 National workshops
3202 National workshops
3203 National workshops
4101 Office Supplies
4201 Office equipment (computer)
5202 Compilation and Production of Second National Communication
5301 Communication

99 GRAND TOTAL

Signed: _________________________________________________
Duly authorized official of supporting organization

NB: The expenditures should be reported in line with the specific object of expenditure as per project budget.
Annex 4 – Format for Quarterly Progress Report
As at 31 March, 30 June, 30 September and 31 December
(Please attach a current inventory of outputs/Services when submitting this report)

1. Background Information

1.1 Project Number:

1.2 Project Title:

1.3 Division/Unit:

1.4 Coordinating Agency or Supporting Organization (if relevant):

1.5 Reporting Period (the six months covered by this report):

1.6 Relevant UNEP Programme of Work (2002-2003) Sub programme No:

1.7 Staffing Details of Cooperating Agency/ Supporting Organization (Applies to personnel / experts/ consultants paid by the project budget):

<table>
<thead>
<tr>
<th>Functional Title</th>
<th>Nationality</th>
<th>Object of Expenditure (1101, 1102, 1201, 1301 etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

1.8 Sub-Contracts (if relevant):

<table>
<thead>
<tr>
<th>Name and Address of the Sub-Contractee</th>
<th>Object of Expenditure (2101, 2201, 2301 etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

2. Project Status

2.1 Information on the delivery of outputs/services

<table>
<thead>
<tr>
<th>Output/Service (as listed in the approved project document)</th>
<th>Status (Complete/ Ongoing)</th>
<th>Description of work undertaken during the reporting period</th>
<th>Description of problems encountered; Issues that need to be addressed; Decisions/Actions to be taken</th>
</tr>
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<tbody>
<tr>
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</tbody>
</table>

2.2 If the project is not on track, provide reasons and details of remedial action to be taken:

3. Discussion acknowledgment (To be completed by UNEP)

<table>
<thead>
<tr>
<th>Project Coordinator’s General Comments/Observations</th>
<th>First Supervising Officer’s General Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME: _________________________ DATE: _____________</td>
<td>NAME: _________________________ DATE: _____________</td>
</tr>
<tr>
<td>SIGNATURE: ____________________________</td>
<td>SIGNATURE: ____________________________</td>
</tr>
</tbody>
</table>
**Attachment to Quarterly Progress Report: Format for Inventory of Outputs/Services**

### Meetings (UNEP-convened meetings only)

<table>
<thead>
<tr>
<th>No</th>
<th>Meeting Type (note 4)</th>
<th>Title</th>
<th>Venue</th>
<th>Dates</th>
<th>Convened by</th>
<th>Organized by</th>
<th># Participants</th>
<th>List attached Yes/No</th>
<th>Report issued as doc no</th>
<th>Language</th>
<th>Dated</th>
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</table>

#### List of Meeting Participants

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of the Participant</th>
<th>Nationality</th>
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#### Printed Material

<table>
<thead>
<tr>
<th>No</th>
<th>Type (note 5)</th>
<th>Title</th>
<th>Author(s)/Editor(s)</th>
<th>Publisher</th>
<th>Symbol</th>
<th>Publication Date</th>
<th>Distribution List Attached Yes/No</th>
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#### Technical Information / Public Information

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<th>No</th>
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#### Technical Cooperation

<table>
<thead>
<tr>
<th>No</th>
<th>Type (note 6)</th>
<th>Purpose</th>
<th>Venue</th>
<th>Duration</th>
<th>For Grants and Fellowships</th>
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<td>Beneficiaries</td>
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#### Other Outputs/Services (e.g. Networking, Query-response, Participation in meetings etc.)

<table>
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<th>No</th>
<th>Description</th>
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13. NOTE 4  
Meeting types (Inter-governmental Meeting, Expert Group Meeting, Training Workshop/Seminar, Other)  
14. NOTE 5  
Material types (Report to Inter-governmental Meeting, Technical Publication, Technical Report, Other)  
15. NOTE 6  
Technical Cooperation Type (Grants and Fellowships, Advisory Services, Staff Mission, Others)
Annex 5 – Format for Inventory of Non-Expendable Equipment

PURCHASED AGAINST UNEP PROJECTS UNIT VALUE US$1,500 AND ABOVE AND ITEMS OF ATTRACTION

As at ______________________________

Project No._______________________

Project Title _________________________________________________________________

Executing Agency: __________________________________________________________

Internal/SO/CA (UNEP use only) _____________________________________________

FPMO (UNEP) use only) _____________________________________________________

<table>
<thead>
<tr>
<th>Description</th>
<th>Serial No.</th>
<th>Date of Purchase</th>
<th>Original Price (US$)</th>
<th>Purchased / Imported from (Name of Country)</th>
<th>Present Condition</th>
<th>Location</th>
<th>Remarks/recommendation for disposal</th>
</tr>
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<tbody>
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The physical verification of the items was done by:

Name: ___________________________ Signature: ________________________________

Title: ___________________________ Date: ________________________________
Annex 6 – Format for Terminal Report

TERMINAL REPORT

1. Background Information

1.1 Project Number
1.2 Project Title
1.3 UNEP Division/Unit
1.4 Implementing Organization

2. Project Implementation Details

2.1. Project Activities (Describe the activities actually undertaken under the project, giving reasons why some activities were not undertaken, if any)

2.2. Project Outputs (Compare the outputs generated with the ones listed in the project document)

2.3. Use of Outputs (State the use made of the outputs)

2.4. Degree of achievement of the objectives/results (On the basis of facts obtained during the follow-up phase, describe how the project document outputs and their use were or were not instrumental in realizing the objectives / results of the project)

2.5. Determine the degree to which project contributes to the advancement of women in Environmental Management and describe gender sensitive activities carried out by the project.

2.6. Describe how the project has assisted the partner in sustained activities after project completion.

3.1 Conclusions

3.1 Lessons Learned (Enumerate the lessons learned during the project’s execution. Concentrate...
on the management of the project, including the principal factors which determined success or failure in meeting the objectives set down in the project document)

3.2 Recommendations (Make recommendations to (a) Improve the effect and impact of similar projects in the future and (b) Indicate what further action might be needed to meet the project objectives / results)

4. Attachments

4.1 Attach an inventory of all non-expendable equipment (value over US$ 1,500) purchased under this project indicating Date of Purchase, Description, Serial Number, Quantity, Cost, Location and Present Condition, together with your proposal for the disposal of the said equipment

4.2 Attach a final Inventory of all Outputs/Services produced through this project

ATTACHMENT TO TERMINAL REPORT:
FORMAT FOR INVENTORY OF OUTPUTS/SERVICES

Meetings (UNEP-convened meetings only)

<table>
<thead>
<tr>
<th>No</th>
<th>Meeting Type (note 4)</th>
<th>Title</th>
<th>Venue</th>
<th>Dates</th>
<th>Convened by</th>
<th>Organized by</th>
<th># of Participants</th>
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</tbody>
</table>
### List of Meeting Participants

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of the Participant</th>
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### Technical Cooperation

<table>
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<tr>
<th>No</th>
<th>Type (note 6)</th>
<th>Purpose</th>
<th>Venue</th>
<th>Duration</th>
<th>For Grants and Fellowships</th>
<th>Beneficiaries</th>
<th>Countries/Nationalities</th>
<th>Cost (in US$)</th>
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</thead>
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### Other Outputs/Services (e.g. Networking, Query-response, Participation in meetings etc.)

<table>
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13. NOTE 4
Meeting types (Inter-governamental Meeting, Expert Group Meeting, Training Workshop/Seminar, Other)
14. NOTE 5
Material types (Report to Inter-governental Meeting, Technical Publication, Technical Report, Other)
15. NOTE 6
Technical Cooperation Type (Grants and Fellowships, Advisory Services, Staff Mission, Others)
Annex 7 – Terms of Reference

NATIONAL PROJECT COORDINATOR

A National Project Coordinator (NPC) will be hired to oversee project implementation, under the UNEP supervision. He/she will be responsible for the overall management of all aspects of the project, and will provide technical assistance to the national technical expert groups. The candidate should be highly motivated, enthusiastic, and capable of working independently. He/she should have a strong institutional and policy background. The NPC should have experience in preparation of Initial National Communication on Climate Change and/or in other climate change enabling activities. The ability to work with a wide variety of people from governments, agencies, non-governmental organizations, and research institutions is essential.

Duties

1. Co-ordinate all project activities with leaders of technical expert groups, and a range of institutions and agencies, including UNEP, IPCC, UNFCCC, GEF, and national institutions to ensure smooth and timely execution of project activities.
2. Prepare a detailed project work plan and Approve terms of reference for the project consultants.
3. Liaise with the relevant ministries, national and international research institutes, NGOs, and other relevant institutions in order to involve their staff in the project activities, and to gather and disseminate information relevant to the project.
4. Foster and establish links with related national and regional projects, and other international programmes, such as “National Capacity Needs Self-Assessment for Global Environmental Management (NCSA)” and UNEP project on Implementation of the UNFCCC New-Delhi Work Programme on Article 6 on Education, Training and Public Awareness.
5. Provide elements and data to the SA for the preparation of the periodic progress reports on project implementation and ensure that all national project outputs are sent to UNEP.
6. Execute the project expenditures according to the project budget.
7. Arrange national workshops and trainings according to the project work plan. Attend, whenever possible, the relevant regional and international workshops, trainings and conferences.
8. Review all materials generated during the project.
9. Ensure the publication and dissemination of the reports identified as project outputs.
10. Liaise and conduct negotiations on co-operation with Government and financing institutions in order to identify and mobilize sources for the follow-up activities.

Qualifications

11. An advanced scientific degree (MSc or PhD) in environmental science or other related field.
12. Relevant experience in the field of climate change
13. Familiarity with national communications, and with international negotiations and processes under the UNFCCC
14. Substantial experience in Government and in interdepartmental procedures
15. Familiarity with computers and word processing
16. Excellent knowledge of Mauritania
17. Good command in French and Arabic
Duty Station: the project office at the Implementing Agency - Direction de l’Environnement, Nouakchott Mauritania.

Duration: Three years.

SENIOR ADVISOR

A Senior Advisor (SA) will be hired to assist the Project Coordinator overseeing project implementation, under the UNEP supervision. He/she will be responsible for the overall monitoring of all aspects of the project, and will provide technical assistance to the national technical expert groups. The candidate should be highly motivated, enthusiastic, and capable of working independently. He/she should have a strong scientific/technical and policy background. The SA should have experience in preparation of Initial National Communication on Climate Change and/or in other climate change enabling activities. The ability to work with a wide variety of people from governments, agencies, non-governmental organizations, and research institutions is essential.

Duties

18 Monitor all project activities with the NPC and leaders of technical expert groups, and a range of institutions and agencies, including UNEP, IPCC, UNFCCC, GEF, and national institutions to ensure smooth and timely execution of project activities.
19 Assist the NPC in preparation of a detailed project work plan and draft the project progress reports.
20 Assist the NPC in allocation and re-allocation of the project funds and in controlling the project expenditures.
21 Facilitate the process of recruitment of the project personnel (draft terms of reference and vacancy announcement, arrangement of interview, maintenance of roster of national consultants, preparation of recruitment package, etc.).
22 Identify, interview and recruit national and international consultants to work for the project.
23 Foster and establish links with related national and regional projects, and other international programmes, such as “National Capacity Needs Self-Assessment for Global Environmental Management (NCSA)” and UNEP project on Implementation of the UNFCCC New-Delhi Work Programme on Article 6 on Education, Training and Public Awareness.
24 Prepare the periodic progress reports on project implementation and ensure that all national project outputs are sent to UNEP.
25 Control the project expenditures according to the project budget.
26 Identify training needs of the contracted national consultants and other project stakeholders, and identify appropriate courses and trainings for national capacity building.
27 Assist the NPC to arrange national workshops and trainings according to the project work plan. Attend, whenever possible, the relevant regional and international workshops, trainings and conferences.

Qualifications

28 An advanced scientific degree (MSc or PhD) in environmental science or other related field.
29 Relevant experience in the field of climate change
30 Familiarity with national communications, and with international negotiations and processes under the UNFCCC
31 Substantial experience in Government and in interdepartmental procedures
32 Familiarity with computers and word processing
Excellent knowledge of Mauritania
Good command in English, French and Arabic. Translate official project-related papers from English into French and vice versa.

**Duty Station:** the project office at the Implementing Agency - Direction de l’Environnement, Nouakchott Mauritania.

**Duration:** Three years.

**ADMINISTRATIVE ASSISTANT**

An Administrative Assistant (AA) will provide assistance to the National Project Coordinator (NPC) to facilitate smooth implementation of the project. Knowledge of financial/administration procedures as well as involvement in previous activities on preparation of the Initial National Communication is the prerequisite. AA will work on a full-time basis and perform the following duties:

1. Assist the NPC in managing the project activities.
2. Arrange purchasing of office equipment for project purposes on a competitive basis. Maintain inventory of non-expendable equipment.
3. Provide substantial support to the project workshops and trainings. Attend, whenever possible, regional and international trainings relevant to climate change.
4. Set up and maintain the project filing system.
5. Provide general administrative support to project activities.
6. Perform other project-related duties as requested by supervisor.

**Qualifications**

7. An advanced degree in management.
8. A minimum of 3 years of relevant experience in a field related to climate change.
9. Work experience with international organizations.
10. Knowledge of computers and word processing.
11. Excellent French and Arabic.

**Duty Station:** the project office at the Implementing Agency - Direction de l’Environnement, Nouakchott Mauritania.

**Duration:** One year, renewable.

**ACCOUNTANT**

An Accountant will work on a part-time basis under supervision of NPC and in cooperation with SA and AA. The function of the part-time accountant will be:

1. Perform the work of book keeping;
2. Track payment/invoices/receipts and reconcile the accounts for the project ensuring that the funds are properly spent;
3. Ensure that there is proper accountability of the funds;
4. Prepare the expenditure statements in line with the UNEP budget code;
5. Advise on the appropriate utilisation of funds and sign on the accuracy of the expenditures along with the National Focal Point on Climate Change or his NPC designated representative.
**Qualifications**

6 A university degree in economics/finance.
7 A minimum of 3 years of relevant experience.
8 Work experience with international organizations.
9 Knowledge of computers and word processing.
10 Excellent French and Arabic.

**Duty Station**: the project office at the Implementing Agency - Direction de l’Environnement, Nouakchott Mauritania.

**Duration**: 2 months per each project year.

**LOGISTIC ASSISTANT**

A Logistic Assistant (LA) will provide assistance to the National Project Coordinator (NPC) and the Administrative Assistant (AA) in administrative and logistical issues. The LA will work on a full-time basis and provide logistical support to the project activities as defined by NPC and Project Advisory Committee.

**Qualifications**

1 College degree; driver’s license and knowledge of driving rules and regulations.
2 A minimum 1-year experience in logistic services; 5-year experience as a driver.
3 Work experience with international organizations is an asset.
4 Excellent Arabic.

**Duty Station**: the project office at the Implementing Agency - Direction de l’Environnement, Nouakchott Mauritania.

**Duration**: One year, renewable.

**HOUSE KEEPER AND GUARDIAN**

A House Keeper and Guardian (HKG) will provide cleaning and surveillance services of project goods. The HKG will work on a full-time basis and provide logistical support to the project activities as defined by NPC.

**Qualifications**

1 Physical fitness.
2 A minimum 1-year experience in house keeping services; 5-year experience as a guardian.
3 Work experience with international organizations is an asset.
4 Excellent health.

**Duty Station**: the project office at the Implementing Agency - Direction de l’Environnement, Nouakchott Mauritania.

**Duration**: One year, renewable.
TECHNICAL EXPERT WORKING GROUPS (TWGs)

The TWGs will comprise six working groups on:
1. GHG Inventory,
2. Vulnerability and Adaptation Assessment,
3. Mitigation Analysis,
4. Environmentally Sound Technologies,
5. Research and Systematic Observation, and

Each technical group will be headed by a team leader and consist of full-time and part-time consultants from relevant sectors, including government agencies, academic institutions, NGOs, and private sector. The TWGs will be accountable to the National Project Coordinator (NPC). The NPC and the leader of each working group will form the project management team. The TWG will develop the work plan of the group’s relevant activity areas and sectors. They will provide technical assistance for project activities and guidance/training on scientific or methodological aspects of project work. The NPC will co-ordinate all technical assistance and recruitment of consultants for day-to-day project work. Government, in line with UN rules and regulations, can simultaneously employ no project staff.

The TWGs will have the following duties:

1. GHG Inventory TWG

Duties:
1. Assist the NPC in preparation of work plan in part of the relevant activity.
2. Advise on selection and application of appropriate inventory methodologies.
3. Assist in data quality assurance and key source analysis.
4. Recommend the ways of improvement of the national emission factors.
5. Contribute substantially to development of the National Inventory Report and identify the follow-up activities.
6. Assist the NPC in arrangement of the national review and training workshops on improving quality of the national GHG inventory.
7. Suggest on technical capacity building and participate in the sub regional, regional and international trainings on GHG inventory.

2. Vulnerability and Adaptation Assessment TWG

Duties:
1. Assist the NPC in preparation of work plan in part of the relevant activity.
2. Advise on selection of appropriate methodologies to assess vulnerability and adaptation.
3. Oversee the development of climatic scenarios and selection of relevant methodologies.
4. Supervise an assessment of vulnerability and climate change impact.
5. Contribute substantially to development of the National Strategy on Adaptation to Climate Change and identify the follow-up activities.
6. Help organize the national review and training workshops on vulnerability and adaptation measures.
7 Suggest on capacity building and participate in the sub regional, regional and international trainings on integrated assessment modelling.

3. Mitigation Analysis TWG

**Duties:**

1. Assist the NPC in preparation of work plan in part of the relevant activity.
2. Assist the NPC in search and choice of appropriate training courses on applying macroeconomic models.
3. Advise on selection of macro-economic models for evaluating mitigation options and measures for GHG emission reduction.
4. Overview and select measures to mitigate climate change and identify the follow-up activities.
5. Assist the NPC in arranging the national review and training workshops on climate change mitigation measures.
6. Suggest on technical capacity building and participate in the sub regional, regional and international trainings on mitigation measures analysis.

4. Environmentally Sound Technologies TWG

**Duties:**

1. Assist the NPC in preparation of work plan in part of the relevant activity.
2. Advise on selection of priority technological needs.
3. Analyse the cost-effectiveness of the technologies and the opportunities for their application.
4. Assess the existing endogenous technologies for further promotion within the context of national circumstances.
5. Contribute substantially to establishment of database for ESTs, including both mitigation and adaptation technologies.
6. Identify the follow-up activities.
7. Assist in arranging the national review and awareness raising workshops on ESTs and participate in the sub regional, regional and international trainings on ESTs.

5. Research and Systematic Observation TWG

**Duties:**

1. Assist the NPC in preparation of work plan in part of the relevant activity.
2. Assess the existing system for early warning on extreme weather events and methods of seasonal forecasting.
3. Analyse the existing barriers for development of observation systems and research, and identify the follow-up activities.
4. Contribute substantially to development of the *National Information Report on Research and Systematic Observation*.
5. Assist in arranging the national review and awareness raising workshops on research and systematic observation, and participate in the sub regional, regional and international trainings on the matter.
6. Education, Training and Public Awareness TWG

Duties:

1. Assist the NPC in preparation of work plan in part of the relevant activity.
2. Advise on development of outreach materials.
3. Recommend the ways of dissemination of these materials through mass media.
4. Provide training workshop on organizing outreach materials.
5. Identify the follow-up activities.

Duty Station: the project office at the Implementing Agency - Direction de l’Environnement, Nouakchott Mauritania.

Duration: According to the project work plan and terms of reference.

PROJECT ADVISORY COMMITTEE

The Project Advisory Committee (PAC) will be responsible for supervising project execution. This will include evaluating project outputs to ensure that project activities are being carried out in a timely manner and to acceptable levels of quality, and reviewing the needs of country throughout project implementation.

The Director of Environment (DENV), with the NPC as its Secretary, will chair the PAC. It is envisaged that the PAC will meet two times a year.

The PAC will be comprised of:

1. Director of Environment, National Focal Point on Climate Change (NFP CC) and GEF Operational Focal Point (GOFP) in Mauritania
2. National Project Coordinator of this SNC project
3. Task Manager Climate Change, UNEP
4. Four representative from the key project collaboration agencies:
   - Ministry of Rural Development and of Environment
   - Ministry of Economic Affairs and of Development
   - Ministry of Interior
   - Ministry of Hydraulic and of Energy
   - State Committee for Meteorology

The PAC responsibilities will include the following:

1. Monitoring and reviewing the progress of the project against its stated outputs;
2. Reviewing and approving the project work plan;
3. Making modifications, as necessary, to the number and scope of national workshops being organized under the project;
4. Making modifications, as necessary, to activities and outputs in order to achieve the project’s objectives.