1.1 Title of Sub-Programme: Climate Change – Enabling Activities

1.2 Title of Project: Republic of Senegal: Preparation of the Second National Communication under UN Framework Convention on Climate Change (UNFCCC)

1.3 Project Number:

Sub-Project: IMIS: GFL-2328-2724-4926
PMS: GF/2010-04-83

Main Project: IMIS: GFL-2328-2724-4769
PMS: GF-2010-04-06

1.4 Geographical Scope: Republic of Senegal

1.5 Implementation:

GEF Implementing Agency: United Nations Environment Programme

Project Executing Agency: Ministry of Environment and Protection of Nature Direction Environnement et Etablissements Classés MEPN / DEEC
BP 6557 Dakar, Senegal
Tel: 221 8210725 / 221 8226211
Fax 221 822 62 12
fdtoure@sentoo.sn, denv@sentoo.sn

1.6 Duration: 36 Months

Commencing: June 2006
Completion: May 2009

1.7 Cost of Project: (Expressed in US Dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost to GEF Trust Fund</td>
<td>125,550</td>
<td>163,350</td>
<td>76,950</td>
<td>39,150</td>
<td>405,000</td>
<td>89</td>
</tr>
<tr>
<td>Govt. In-Kind Contribution</td>
<td>14,000</td>
<td>22,000</td>
<td>11,000</td>
<td>3,000</td>
<td>50,000</td>
<td>11</td>
</tr>
<tr>
<td>Total Cost</td>
<td>139,550</td>
<td>185,350</td>
<td>87,950</td>
<td>42,150</td>
<td>455,000</td>
<td>100</td>
</tr>
</tbody>
</table>

1.8 Project Summary

Decision 2/CP7 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 Republic of Senegal in various thematic areas as highlighted in decision 2/CP.7, and hence capacity building elements will be incorporated in all proposed activities.

Signature
For the Republic of Senegal
Fatima Dia TOURE
Directeur Environnement et Etablissement Classés (DEEC)
Date: __________________________

Signature
For UNEP
David Hastie
Chief, Budget and Financial Management Service-UNON
Date: ______________________________
SECTION II: BACKGROUND AND PROJECT CONTRIBUTION TO OVERALL SUBPROGRAMME IMPLEMENTATION

Introduction

1. The Earth’s Summit of Rio de Janeiro (Brazil), in June 1992, saw the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) which entered into force on March 21, 1994.

2. The objective of the Convention is to stabilise atmospheric concentrations of greenhouse gases (GHGs) at a level that would prevent dangerous anthropogenic disturbance of the climate system. This level should be reached in such a way that ecosystems can adapt naturally to the climate change and ensure sustainable socio-economic development.

3. Senegal ratified the United Nations Framework Convention on the Climate change in June 1994 and its Kyoto Protocol in July 2001. A National Committee on Climate Change was established in 1994, to ensure the implementation of activities that contribute to the achievement of the objectives of the Convention.

4. For developing country parties to the UNFCCC (also referred to as non-Annex I countries, a key commitment under the Convention for these Parties is the preparation and submission of their national communications in accordance with Articles 4.1 and 12.1 of the UNFCCC, which includes the provision of national inventories of the GHGs not controlled by the Protocol of Montreal, using methodologies proposed by the Intergovernmental Panel on Climate Change (IPCC).

5. Senegal was among the first eight non-Annex I countries to present their initial national communications. It submitted it to the Conference of the Parties (COP) in December 1997 in Kyoto, Japan during the meeting of its third session. This national document helped to inform the international community of the efforts of the Government and people of Senegal to implement the Convention. The report also described the constraints, problems and information and data gaps which must be addressed to help Senegal effectively implement the Convention.

6. Senegal is of the view that the second national communication is a very useful information tool on climate change as well as a strategic document to help the country position its legitimate socio-economic interests and priorities as they relate to the global objectives of the Convention. At the eighth Conference of the Parties, new and improved reporting guidelines were adopted by Parties to help non-Annex I countries prepare their second and subsequent national communications. The guidelines were annexed to decision 17/CP8.

National Circumstances

7. Senegal is situated at the far end of West Africa, it is in some respect sited at the confluent of the Europe, Africa and America, and therefore at the crossroad of marine, air and road transport. It is a fairly flat country with an average altitude of 200m, and has a total surface area of 197,000 km². It borders, Mauritania to the north, Mali to the east, Guinea and the Guinea Bissau to the south, and the Atlantic Ocean to the west with a coast line of about 500 km.

8. Senegal is located in sahelian region of Africa and therefore characterized by high temperatures and often long seasons of drought like those which occurred in the 1970s and 1980s. More than 53% of the Senegalese population live in rural areas. The country belongs to the groups of countries listed as least developed countries and has a GNP per capita of USD 520 in 2002. Senegal occupies the 154th position in terms of economic development on a list of 173 countries (2000). The country is subdivided into 11 administrative regions, 34 provinces and 320 rural communities. Dakar (550 km²), the capital of Senegal is a peninsula situated at the farthest west of the country.

9. Because of its changing climate and an economy based on export of primary raw materials, Senegal is particularly vulnerable to the adverse effects of climate change.

2. Climate and Vegetation

10. The country has a dry tropical climate characterized by two seasons, a dry season from November to June and one major rainy season which starts in July and often ends in October. Three types of
vegetation dominate in the country; forest to the south, savannah at the centre and steppe to the north.

3. Population

11. The population in 2003 was 10 165 314 inhabitants and growing at a rate of 2.7% per year. The population density was 48 inhabitants per km². More than 25% of the population is concentrated in the region of Dakar with the other pole of concentration of people at the center of the country. The east of the country is the least populated area.

12. There are about twenty ethnic groups in Senegal, the main ones being the Wolofs accounting for about 43% of the citizens of Senegal, the Pulaars (24%), and Sérères (15%).

Economic situation

Table 1: Summary of national economic and social indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Value</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>10 425 000</td>
<td>2002</td>
</tr>
<tr>
<td>Population Density</td>
<td>48 persons per km²</td>
<td></td>
</tr>
<tr>
<td>Growth rate population</td>
<td>2.7%</td>
<td>2002</td>
</tr>
<tr>
<td>Urban population</td>
<td>41.1%</td>
<td>2002</td>
</tr>
<tr>
<td>Literate population</td>
<td>55.7%</td>
<td></td>
</tr>
<tr>
<td>Life expectancy from the birth</td>
<td>52 years</td>
<td>1998</td>
</tr>
<tr>
<td>Population of youth</td>
<td>55.6% are less than 20 years</td>
<td>2002</td>
</tr>
<tr>
<td>GDP FCFA</td>
<td>3 331 billion</td>
<td>2001</td>
</tr>
<tr>
<td>GNP per inhabitant</td>
<td>482.9</td>
<td>2001</td>
</tr>
<tr>
<td>Investment FCFA</td>
<td>3 450 billion</td>
<td>1999</td>
</tr>
<tr>
<td>Stock nominal external debt/ GDP</td>
<td>62.9%</td>
<td>2002</td>
</tr>
<tr>
<td>Impact of poverty (households)</td>
<td>53.9%</td>
<td>2001</td>
</tr>
<tr>
<td>HIV/ AIDS prevalence among adults</td>
<td>1%</td>
<td>2002</td>
</tr>
<tr>
<td>Population with access to the drinking water</td>
<td>72.7%</td>
<td>2000</td>
</tr>
<tr>
<td>Proportion of malnutrition of children about less than 5 year</td>
<td>18.4%</td>
<td>2000</td>
</tr>
<tr>
<td>Raw rate of children in full-time education</td>
<td>71.6%</td>
<td>2002</td>
</tr>
<tr>
<td>Girls/ Boys at primary school</td>
<td>0.89%</td>
<td>2002</td>
</tr>
<tr>
<td>Death rate of less than 5 years children</td>
<td>145.7 ‰</td>
<td>2000</td>
</tr>
</tbody>
</table>

Source: Millennium Development Goals (UNDP) 2003

Poverty

13. In Senegal, poverty is characterized according to a defined line of poverty starting from a threshold (fixed at 2400 calories per adult equivalent and day) under which, household (or the individual) is considered as poor. According to the results of the ESAMII, the poverty incidence decreased significantly during the period 1994-1995. The percentage of population living below the poverty line passed from 67.9% to 57.1% between 1995 and 2002.

Energy:

14. The main source of energy in Senegal is the biomass. The traditional energies as the wood of fire-chamber, the coal of wood constitutes more than 55% of the total energy used, the oil products represent about 40%, used in the transportation and the industry, while the rest is the consumed energy coming from electricity (less than 5% of the balance) is used in the industry and in the residential sector. Gas butane only represents 1.5% of the total consumption.

15. The thermal electricity of the country is generated exclusively by a park of thermal production: 340 MW of power installed and 50 MW of independent production in combined cycle by the society American GTI. The production in 2004 is of 1957 GWh. SENELEC, the main national company have a production of 1312 GWh, with 293, 11 from Manantali Dam, 0.77 GWh from autoproducers (ICS, SOCCOCIM, SONACOS, Ciments du Sahel, etc., ) and 350,91 GWh by independents companies (GTI…). The consumption in oil products is of more than 300 000 tons. It
presents more than 300 000 subscribers and the demand of electricity has a growth rate of 5% per year.

The production is assured in quasi-totality by thermal power stations that use either some fuel or diesel and the natural gas. In 2003, only 12.5% of rural households have access to electricity, this rate is about 76.3% in urban area. The electrification of the whole country is 40.7 %. With regard to renewable energy, the potential is very high, but is under used. Senegal have an excellent solar deposit allowing an economical use for the decentralised production of electricity or the heating of water (3 000 hours of annual insolation, daily insolation 5.4 kWh per m2), with 3 to 5.7 m/s of wind speed, between Dakar and Saint Louis. This ensures the pumping of water and the production of electricity in isolated area.

16. The weakness of the electrification is considerable, 75% of the populations have no access to electricity and one notes an unbalance in the distribution of the electrification between the urban and the rural area

17. However, with the new defined electrification policies and implemented since 1998, the government's major guideline is to increase the rate of electrification to 60% in urban area and to 15% in rural area (the present rates are respectively of 50% and 5%).

18. To this effect, the government decides to privatize electricity to the decentralized scale and create a new Senegalese agency of rural electrification (ASER) entrust to develop the electrification in rural area (ASER). This organism will call on the private investments.

19. The sub regional Energy project of the Manantali barrage (Mauritania-Senegal and Mali) is currently functional and these are 66 MW that are going to participate in the national production on the 200 MW product. This electric production is operational since end 2000 and permits to compensate the present electric deficit during the rainy season.

20. The studies under the project Energy of the dam of the organization for the enhancement of the river Gambia (OMVG), sub regional project (Senegal-Gambia and Guinea Conakry), the potential is about 80 MW.

21. The other energies as the solar knows a popular policies in order to satisfy the immense needs in photovoltaic systems for the rural households, for the communal infrastructures and for the productive uses (millet mills, pumping, refrigerators, driers and stoves, etc...).

22. For the wind, the development of systems for the pumping of water particularly in the area of the Niayes is strongly reinforced.

23. As a non-fossil fuel producer, the nation’s dependence on oil constitutes an important burden to the Senegalese economy, this is particularly so when one considers economic growth in 2002, was just over 2.4%.

24. With the present price of a barrel of oil reaching the USD 70 the reduction of the subsidy on gas butane used by the households, would imply that the fossil fuel needs of many households, particularly those in the rural areas would not be met. This would lead to increased demand for biomass to meet the short fall would put increased pressure on the Senegalese forests which is currently under degradation.

Forestry

25. Senegal has been over the past decades, have been experiencing deforestation mainly as a result of the rapid conversion of forest land to agriculture. This situation is further exacerbated by increasing demand for wood fuels as a result of rapid population growth.

26. The national land resources are in a state of advanced deterioration, of a total of 11 million hectares inventoried in 1960, only 8.1 million hectares existed in 1980, 7.5 million hectares in 1990 and 6.3 million hectares now remains (State of the Environment, 2000).

27. The restoration of the soils fertility and efforts to combat desertification and reverse the trend of deforestation is becoming a strong national imperative taking into account, the numerous projects and programmes employing various techniques of soil conservation and natural resources. They include (i) combating the wind erosion (construction of hedges, windbreak) and water conservation, (ii) correction of the acidity of soils, and the promotion of domestic generation of green manure and communal programmes of reforestation, and cultivation of woodlots.
Transportation and Infrastructure:

28. The road sector in Senegal constitutes one of the best within West African region and it plays an important role in the economic development of the country. It now benefits from an important outside contribution through the Program of Sectoral adjustment of the Transportation (PAST) and the program of reform of the urban transportation of Senegal managed by the CETUD in order to facilitate the urban mobility. The total road network is of 14576 km of which 4265 are tarred (about 29,3%) and 10371 kilometer without road surface (70,7%). The fleet of cars was estimated in 1996 to be about 126 524 vehicles, but it has knew an exponential growth rate during these last years with the importation of second hand vehicles.

29. The airport infrastructure is inadequate, however, because of the unique geographical position of Dakar i.e. between Europe and America, the air-traffic has become important for Dakar. This is evident by the fact that in 1998 there were 8450 plan arrivals and 8494 departures. Since the year 2000, Senegal has a new airline company thereby enhancing air traffic at the national and international levels.

30. The railway network is 1300-km long and carries national and international traffic of people and goods, between Dakar - Thiés - Saint Louis and Dakar - Thiés - Mali.

31. The sector of the maritime transportation assures in volume 95% of the exchanges. One distinguishes the main port of Dakar and the secondary ports of Saint Louis, of Kaolack and Ziguinchor.

32. These infrastructures are also vulnerable to the climate change, especially to the flood that can damage their quality strongly and make difficult all sort of circulation. Such impacts strongly act on the economy and the travel of goods and people. This phenomenon is now known in Senegal with the excesses of rains knew in August 2005.

The Sector of Health

33. The life expectancy in Senegal is about 25 years, that is to say 51 and 54 respectively for the men and the females. The infantile death rate is about 60 per 1000 while the giving birth mortality reaches a meaningful rate of 1200 losses per 100 000 individuals. The stern malnutrition phenomenon knew a decline, passing from 23% in 1990 to 13% in 2000. In addition, 65% of the rural population and 95% of the urban population have access to the drinking and improved water.
Table 2: Relative indicators within health sector.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians for 1000 individuals</td>
<td>0.1</td>
</tr>
<tr>
<td>Beds of hospitals for 1000 individuals</td>
<td>0.4</td>
</tr>
<tr>
<td>The rate of immunization of the young (under one year)</td>
<td>60%</td>
</tr>
<tr>
<td>Measles</td>
<td>60%</td>
</tr>
<tr>
<td>Rate of prevalence of malnutrition</td>
<td>23%</td>
</tr>
<tr>
<td>Rate of malnutrition (under 5 years)</td>
<td>23%</td>
</tr>
<tr>
<td>Births attended by skilled health staff</td>
<td>47%</td>
</tr>
</tbody>
</table>

Source: World Development Indicators, 2002,

The sector of Water Resources:

34. Senegal has important water resources in surface and underground. Water resources in surface are distributed in four big hydrographic systems that are river Senegal, river Gambian mid waterway, Sine-saloum and Casamance. The last two rivers have their basins fully included in the national space whereas Senegal and Gambia, that take their source in the foothills of the Fouta Djalon (in Guinea) have their basins shared between the riverside countries of Senegal, in this case Guinea, Mali and Mauritania (for the basin of river Senegal), Guinea, Gambia and the Guinea Bissau (with regard to the basin of river Gambia). To this main network one can add the superior waterway of Kayanga (before it enters in Guinea Bissau) and its main affluent, Anambé. All these courses have a tropical out-flow conditions of seasonal nature (Rodier J. 1964).

35. Underground water resources are distributed in three big aquiferous reservoirs. A deep reservoir, of under pressure table water e (captive table water), dating to the Maastrichtian age (at the end of the secondary era), a semi-deep reservoir, of fracture porosity, dating to the Palaeocene and the Eocene age (in the beginning and in the middle of the tertiary era), a superior reservoir, of free table water, constituted by the rising formations of the Terminal and Quaternary Continental.

36. In 2004, 50% of the rural localities of Senegal have at least a reasonable access infrastructure to the drinking water, of which 24% are supplied by an AEP network. The hydraulic infrastructures that existed or achieved in short-term will assure on 2005-2006 horizon a "reasonable" access to the drinking water for 73% of the rural population (value HS-B average on 2005-2006 horizon). However the sector of purification knows a very insufficient consideration, only 13% of the households have access to the network of purification and 14% of the waste waters collected by the networks of purification on all the extent of the territory are treated in a station of purification;

Coastal area

37. Senegal with a less more of 700 kilometres of coastline is extremely dependent of its coastal area because this one shelters particular and very productive ecosystems ("niayes", mangrove swamps), a big part of the population and the economic activities that contributes for an important part to the formation of the gross national product (fishing, tourism).

38. Fishing sector replaces now the peanut production sector in its contribution to the GDP. The fishing represents 30% of the products of export of Senegal in 2002 and use more than 15% of the active population.

II. The Institutional Context

39. The Ministry of Environment and Nature Conservation was created in 1993. It acts under the authority of the Prime minister and the President of Republic.

40. The Ministry of Environment and the Nature Conservation has the responsibility of promoting of the rational management of the natural resources and work to the improvement of the population environment in a perspective of sustainable development and reduction of poverty. This mission is reaffirmed through the sectoral policy and the legal order defining the assignments of the Ministry of the Environment and the Nature Conservation.

41. Specifically, the Ministry of the Environment and the Nature Conservation is assigned to:
   (i) Combat all kinds of pollutions;
   (ii) Preserve fauna and flora;
(iii) Use rationally the forest potential and the management of the forest economy;
(iv) Protect the rivers against the invasions of the aquatic plants;
(v) Protect the national parks and other protected areas;
(vi) Protect the threatened animal and plant species;
(vii) Prepare and enforce legislation and the regulations regarding hunting and ensure the development of the ecotourism;
(viii) Combat bush fires, enhance regeneration of soils and combat desertification;
(ix) Support to the local communities as regards to the collection of garbage and ensures its treatment;
(x) Promote and develop environmental education;
(xi) Manage a mechanism of monitoring and following-up the phenomenon of climate change and modification of the state of the environment.

42. It represents the State in technical international meetings on the environment, climate change and biodiversity.

43. The socio-economic development context of Senegal has made positive impacts on (i) combating poverty within the framework of the Poverty Prevention and Reduction Strategy document (PPRS), (ii) the political decentralization process that dedicates a real devolution of effective power to the local communities particularly as regards the managing of the natural resources and (iii) a perspective of integrated development at the regional level within the framework of NEPAD and at the international level within the framework of the Millennium Development Goals (MDGs).

44. The strategic objectives of the PPRS are:
   (i) The creation of wealth;
   (ii) The promotion of the basic social services;
   (iii) The protection of the vulnerable groups and the improvement of their life condition;
   (iv) As a follow-up of the above, the Ministry of Environment and Nature Conservation intends to contribute to the reduction of poverty by:
       • The increase of the value of the forest and animal resources;
       • The safeguard of the biodiversity;
       • The improvement of the urban and rural environment;
       • The strengthening of the capacities in managing the natural resources;
       • The communal management of the protected areas.

45. In the field of environment, the Ministry seeks "to promote the reversion of the tendencies to degrade the environmental resources" as enshrined by the millennium development goals. The ministry seeks to achieve this goal by ensuring at the national level:
   • The management of biodiversity;
   • Combating desertification;
   • Prevention of pollution and minimising the generation of domestic waste; and
   • Combating climate change.

46. The Environmental component of NEPAD as guided by Senegal must permit the development of a strategy aimed at maintaining these resources and using them for the sustainable development of the African continent.

47. Senegal in 2001 with the support of the UNDP and other United Nations agencies prepared its first report with the objective of emphasizing synergies between the Poverty Prevention and Reduction Strategy (PPRS), the tenth National Plan of Development (2002 - 2007) and the follow-up of the Millennium Development Goals.
48. Senegal also elaborated in 2005 its national strategy of combat poverty. This strategy emphasizes on the following elements:
   (i) Growing awareness and education of the actors for Sustainable Development,
   (ii) Promotion of sustainable method of production and consumption,
   (iii) Promotion of a balanced and harmonious development,
   (iv) Strengthening of the sub regional, regional and international mechanisms of cooperation regarding sustainable development,
   (v) Strengthening the principles and mechanisms of good governance for sustainable development,
   (vi) Strengthening of the rules and actions that can contribute at the achievement of the Millennium Development Goals (MDGs).

49. The Government of Senegal decided to experiment, with effect from 2005, the medium-term expenses setting (CDMT) and to introduce the principle of budgets by objectives in four ministerial departments of Environment, Health, Education and Justice.

50. The choice of the Ministry of Environment and nature Conservation to apply this new strategic planning was due to the following:
   (i) Budgetary support from the Netherlands in the environment sector;
   (ii) The importance of a rational and concerted management of the natural resources in combating rural poverty;
   (iii) The multi-year planning that guaranteed a better appreciation of the impact of the projects and programmatic approach to work.

III. Project objectives and linkages with the on-going activities

Status of implementation of the Convention in Senegal

51. Senegal has signed and ratified the following international conventions:
   (i) The United Nations Framework Convention on the Climate Change (UNFCCC)
   (ii) The Convention of Vienna for the Protection of the Ozone layer
   (iii) The Montreal Protocol for the control of Ozone Depleting Substances
   (iv) The United Nations Framework Convention on the Biologic Diversity (UNCBD)
   (v) The United Nations Framework Convention to Combat Desertification (UNCCD)

52. Senegal set as regards to the climate change, a certain number of programmes of which:
   (i) The first initial communication in 1997;
   (ii) The strategy of Setting in work of the Convention;
   (iii) The studies of vulnerabilities in the sectors of agriculture, of water resources, Tourism and coastal areas
   (iv) The strategies of reduction of gases of greenhouse effect;
   (v) The identification of these needs in Transfer of Technology.

53. Currently Senegal is elaborating its National Adaptation Programme of Action to Climate Change (NAPA). The studies of vulnerabilities that underlie this plan of action are the existing studies on the sectors of water, agriculture and the coastal area establishing the vulnerability of these resources and recommending alternative solutions to face these negative impacts on the economy. In this respect, fund must be available for addressing these impacts in the strategic sectors of the economy. Senegal held its NAPA validation meeting February 2006. The meeting concluded that there is a need pay closer attention to these sectors as priority and to the implementation of corrective action. All documentation will be finalised before end of April 2006 and the result published.

54. The NAPA introduces in its process, the approach participative in the choice of the solutions to recommend and it puts the emphasis on the level of vulnerability of the populations, especially the
poor populations. With NAPA, the actions of important and urgent adaptations will be identified according to defined criteria with the populations. The V&A assessments carried out within the framework of the SNC will specifically identify relevant actions which will support the implementation of the NAPA.

Table 3: Summary of the studies on vulnerabilities in Senegal

<table>
<thead>
<tr>
<th>Sector</th>
<th>Vulnerabilities</th>
<th>Adaptation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal area</td>
<td>Rise in sea level:</td>
<td>Identification of vulnerable areas and effective human settlements planning</td>
</tr>
<tr>
<td></td>
<td>- Flooding of low lying areas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Exacerbation of coastal erosion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Salt water intrusion into ground water aquifers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Modification of the &quot;upwellings&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Changes of the human activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Movement of the populations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Destinations of the tourist, industrial infrastructures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insufficiency of good quality water</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>20% of reduction of the rain</td>
<td>Development of the irrigation systems</td>
</tr>
<tr>
<td></td>
<td>- Increase of the evaporation</td>
<td>Intensification of agricultural production</td>
</tr>
<tr>
<td></td>
<td>- Loss of the agricultural outputs</td>
<td>- Improvement of soil fertility.</td>
</tr>
<tr>
<td></td>
<td>- Reclamation decision</td>
<td>- Introduction of short cycle varieties</td>
</tr>
</tbody>
</table>
IV Project activities and expected results

National Inventories of Greenhouse Gases

55. The national inventory of gases of greenhouse constitutes one of the key element of national communication.

Previous Activities

56. During the stocking exercise it was recalled that in Senegal, national greenhouse gas inventories were carried out for the years 1991 and 1994. The activity data employed for the inventories obtained was the result of collaboration of the following institutions and agencies:

(i) Direction of the energy;
(ii) Ecological Follow-up Center;
(iii) ENDA-Energy;
(iv) Direction of Waters, Forests, Hunt and Conservation of Soils;
(v) Direction of agriculture;
(vi) Direction of breeding;
(vii) Direction of the industry;
(viii) Urban Community of Dakar
(ix) Universities and Institutes of research
(x) Direction of the Weather report

57. The inventory has been achieved for the following sectors: energy, agriculture, wastes, industrial processes and forestry. The national inventory of the GHGs in Senegal was carried out using the 1996 IPCC revised guidelines. Default emission factors were often used for the inventory exercise, however, in some cases, it was possible to use national data for greater precision and accuracy. The net emissions for Senegal for the year 1995, where data was more complete was 3572 Gg CO2eq.

58. The net emissions have been extensively reduced due carbon sequestration by protected forests. It was noted during the stocking exercise that the energy sector was responsible of 41% of the emissions. Industrial plantations account for more than 45% of managed forests.

Constraints and Gaps

59. The gaps and constraints identified during the stocktaking exercise include:

(i) Insufficient training in the use and application of the revised 1996 IPCC GHG Inventory methodologies and Good practice guidance on uncertainty management
(ii) Lack of data in some sectors such as: forestry, agriculture, Waste;
(iii) Lack of technical and financial means to execute some activities as the execution of project in situation;
(iv) Financial constraints to support some needed research, particularly in the area of adaptation;
(v) Lack of suitable document in French;

Proposed Activities

60. This activity will aim to improve the GHG inventory by reducing the uncertainties through the use of improved emission factors. 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*, to ensure that the results of the inventory will be as reliable as possible.

61. 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.

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

(i) Through a comprehensive review of the GHG inventory undertaken during the INC project, 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.
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 2002 will be updated for carbon dioxide (CO₂), nitrous oxide (N₂O) methane (CH₄), nitrogen oxides (NOₓ), carbon monoxide (CO), non-methane volatile organic compounds (NMVOC) and sulfur 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.

The activity data on hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur 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.

Some sectors will be covered in more depth. For example, in agricultural sector, emissions from enteric fermentation could 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 INC. Similarly, the assessment of methane emissions from domestic and commercial wastewater will be specific to each region.

In the energy sector, the emissions of GHG and sulfur dioxide will be estimated based on sub-sectors (i.e., production and transformation of energy, industrial process and construction, transport, commercial/uninhabited sector, inhabited sector, agriculture, forestry and fishery). The emissions from gas operations will also be considered.

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.

While the database for CO₂, N₂O, and CH₄ will be updated, a new database for HFCs, PFCs, SF₆, NOₓ, CO, NMVOC 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.

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.

To improve transparency, consistency, comparability, completeness and accuracy in inventories in accordance with the methodologies in IPCC Good Practice Guidance, any key source analysis will be undertaken, and the level of uncertainty associated with inventory data and their underlying assumptions will be analyzed.

The National GHG Inventory Report (NGIR) including technical annexes that detail the inventory procedures and calculations will be prepared. The NGIR, including identification of further needs and follow-up activities will be prepared collectively by the GHG Inventory TWG(GITEG). The NGIR will also include detailed description of procedures and arrangements undertaken to collect and archive data for the preparation of national GHG inventories, as well as efforts to make this a continuous process, including the role of the institutions involved.

Two workshops will be organized during the activity cycle. These are the planning workshop at the start of the proposed activities, which will be held back to back with a training workshop on IPCC Good Practice Guidance and Uncertainty Management in National GHG Inventories, the mid-term review and the end of project review workshops. 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.

The above activities will be undertaken by the GHG Inventory Group. 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 the new team members.

66. 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.

67. The NGIR, including identification of further needs and follow-up activities will be prepared collectively by the GHG Inventory Group. The NGIR (consisted mainly from worksheets and calculations) will form a reference document attached to the SNC.

Major outputs:

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

(i) Review of previous GHG inventory;
(ii) New inventory data for CO₂, N₂O, CH₄, HFCs, PFCs, SF₆, NOₓ, CO, NMVOC and SO₂, for the years 1995 to 2002 or later data permitting; An updated GHG inventory report will be prepared, including technical annexes. It will also highlight procedures and calculations undertaken;
(iii) Updated and improved GHG inventory database;
(iv) New factors of CO₂ emission/sink from/to soils in "Land-Use Changes and Forestry" sector; and new methane emission factors from agricultural soils;
(v) Emission trends and forecasts for the period up to 2020;
(vi) A chapter on National GHG Inventories for inclusion in second national communication;
(vii) The reports of the workshops including major papers presented;
(viii) Strengthened human, scientific, technical and institutional capacity.

69. As part of the second communication of Senegal, the year of reference has been discussed strongly; suggestions for the years 2000 and 2003 have been made. This choice will depend on the existence of the most applicable data for the use of the new reviewed methodology of the IPCC.

70. During this activity of inventory, the key structures as the industry, the CSE, agriculture, breeding, Waters and Forests, the agricultural and forest research, the energy, the transportation, the local communities as part of the management of the garbage will be associated to this work of collecting data. In the same way the civil society through the CONGAD and ENDA Third World will be associated to these works.

71. It will also consists in taking into consideration the lessons learnt at the time of the development of the initial communication of Senegal and solutions proposed as part of the UNDP/GEF project of strengthening of the capacities for the inventories of GHGs especially for the application of the factors of most suitable emissions at the national context. To this effect, the team of inventory will do national and regional a review of the literature.

72. A team will be established according to the sectors of the inventory to collect the information. The recommendations of the IPCC concerning good practices for the use of the earths, the change of affection of the earths and the forestry will be used for sector agriculture and forestry

Programs including measures to facilitate an appropriate adaptation to climate change.

Previous Activities

73. The national consultation process and the stocktaking exercise which preceded it provided an opportunity to review past and current climate change adaptation activities in Senegal. It was observed that Senegal, as a developing country is extremely vulnerable to the adverse effects of climate change. It is therefore essential for the protection of the economy of Senegal, to gain a better understanding of the vulnerability of the country to climate change and develop of portfolio adaptation strategies of adaptations to mitigate the negative impacts of global warming on the natural ecosystems and human settlements and activities. It is within this framework that national adaptation and mitigation projects and programmes were formulated. Netherlands Climate Change Assistance Programme (NCCSAP) studies offered an important opportunity to carry out some following studies:
Assessments of the vulnerability of the Senegalese coasts to the climate change. Case studies were carried out in the Cape Verde peninsula and the estuary of the Saloum river project possible future significant bio-physical and socioeconomic impacts.

The impact of the climate change on the agricultural production has been analyzed as part of the vulnerability studies in the climate change of the NCCSAP I. The studies demonstrated that agricultural production is highly vulnerable to climate vulnerability due to the fact that water stress would result in decreased agricultural outputs. The climate variability has resulted in a marked decrease in rainfall over the past thirty years, which has invariably adversely affected the level of agricultural production in Senegal.

Water resources have also been demonstrated by studies carried out under the CC-TRAIN programme, to be vulnerable to climate variability. This survey showed a strong quantitative and qualitative deterioration of water resources in Senegal, a process which is leading to the creation of a sahelian environment in the study areas.

The lack of water has also pushed farmers to deforest the plateaux and versants areas in search of agricultural lands. This phenomenon is also increasing leading to deforestation in the southern areas of Senegal.

Tourism is an important industry in Senegal which will be adversely affected by climate change. Seaside tourism is especially vulnerable to projected impacts of climate change. A sea level rise of between 50 to 100 cm by 2100 will cause important losses to the industry. It is expected that between 22 and 50% of the tourist infrastructures would be at risk.

Impacts and vulnerability assessment conducted during the preparation of the Initial National Communication also revealed that Senegal is highly sensitive to the adverse impacts of climate change. The stocktaking exercise reviewed the work that has been done since the preparation of the Initial National Communication and the work done under the Netherlands Climate Change Assistance Programme (NCCSAP) and concluded that assessments during the preparation of the Second National Communication should cover all relevant key sectors of the national economy including water resources, agriculture, health, industry, and human settlements. Concerted efforts would be made to avoid duplication of work already done.

Proposed activities:

Activities proposed to be undertaken during the preparation of the second national communications and which were endorsed during the national consultation process included: Assessment of the climate variability and climate change in Senegal, including their trends;

(i) Development of detailed climate scenarios, mapping of climate change indicators using the new climate 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) to make them more specific to Senegal;

(ii) Trend analysis and construction of scenarios for agriculture sector development; and vulnerability assessment of agro-climate resources (sums of efficient temperatures, seasonal sums of precipitation, etc.) under various climate scenarios;

(iii) Assessment of evaporation from irrigated land under various climate scenarios, types of soil and their salinity and groundwater level, and selection of criteria for assessment;

(iv) Assessment of the quantity of water resources in the zone of their formation (volumes and temporal run-off structure);

(v) 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 model, which is an integrated Water Evaluation and Planning System, to simulate water demands and supplies;

(vi) Vulnerability and impact assessment of the fishing and agriculture sectors, including the assessment of average productivity of various crops based on various climate 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. An analysis of the evolution of the fish stocks and the
movements of currents type "upwellings" would allow a better understanding of the vulnerability of this sector and to propose the strategies of suitable answers to keep some species and to guarantee a provision of the national needs;

(vii) Vulnerability and impact assessment of human health, including the impact of extreme weather events. Vector borne diseases that will be studies include malaria and bilharzias.

(viii) Vulnerability and impact assessment of industry and municipal services, including the impact of extreme weather events and water shortage;

(ix) Vulnerability and impact assessment of biodiversity and natural ecosystems (i.e., flora and fauna, including forest, desertification processes, etc.).

(x) Vulnerability and impact assessment of coastal infrastructures such as roads and bridges to coastal erosion and flooding.

(xi) Monitoring the proposed agro-forestry program to be implemented under NAPA so as to assess its potential effect on reducing vulnerability. This information can then be used to directly suggest best practices and vulnerable regions in the country for policy integration, which is one of the expected outcomes of the program.

79. The vulnerability and adaptation assessment will be undertaken using appropriate methodologies that may be better able to reflect national situation, such as:

(i) The IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations (Carter et al. 1994);

(ii) The UNEP Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies (Feenstra et al., 1998);

(iii) The International Handbook on Vulnerability and Adaptation Assessments (Benioff et al., 1996);

(iv) Developing Socio-Economic Scenarios for Vulnerability and Adaptation Assessments; Methodologies and Tools to Evaluate Strategies for Adaptation to Climate Change (UNFCCC, 2000);

(v) 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.

80. Recommendations on zoning for agriculture needs will be developed. Risk zones will be identified and appropriate maps will be constructed using Geographical Information System (GIS).

81. Based on the vulnerability and impact assessments, a draft National Adaptation Strategy to Climate Change for key socio-economic sectors will be developed. The Strategy will include:

(i) The review of both analysis of measures and technologies for minimizing damages and for mitigating negative consequences of climate change;

(ii) The development of interactive mechanism between key socio-economic sectors and their sub-sectors;

(iii) Development of special information materials (e.g., maps, diagrams, decision matrices) for policy makers;

(iv) The list of the top priority measures recommended for inclusion in sustainable development strategy;

(v) Analysis of barriers and necessary activity for integration of adaptation measures in the mid- and long-term national development plans.

The National Adaptation Plan of Action

82. The plan is based on the studies done on the pre-existing vulnerabilities. Senegal is elaborating its national action plan for the adaptation to the climate change (NAPA). Some public consultations have been made in the different regions and projects of adaptation activities have been identified through Senegal, it will consist in developing first these potential projects and finding the ways of financing these chosen projects to the national level as the most important.

83. In the second national communication, the results of NAPA will be reflected as well as the state of their implementation. In the same way the information on the second phase of the Netherlands Climate Change Assistance Project (NSCCAP) will be integrated, particularly on the sectors of infrastructures, health and tourism.
84. It is evident from the consultation with the national actors, a need to develop, for some sectors, as health, the fishing, programs at a sub regional level to facilitate the acquirement of data, to develop some synergies and to show the real extent of the vulnerability and the affected populations.

85. The integration of the climate change in the national programs of development will be to be established. In the context of the second national communications this will involve the demonstration of the potential impacts of climate change and climate variability in the sectoral development plans and in assessing that at the national level, how the development policies take into account planned adaptation options in all relevant sectors of the economy when defining the national plan for development. In this way, sustainable development dimensions will be explored in the context of climate change.

National Adaptation Strategy to Climate Change

86. The draft National Adaptation Strategy to Climate Change will be prepared by national experts and reviewed by the PMT. A national workshop with the participation of all relevant stakeholders will be convened to discuss the strategy before its submission to the DENV for review and approval.

87. 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. In developing this strategy, demonstration projects to be implemented through the NAPA will also a source of much needed data and "proof" needed to inform policy makers. A policy component could be added on to the NAPA implementation program through the SNC. The timing is perfect in a way, as the projects can really provide added value to each other.

88. As the NAPAs move into implementation, they can provide much needed field information to inform the policy development and integration into sustainable development which has not worked very well so far for lack of data and information.

89. This activity will also include development of the proposals to 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.

90. 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 SENEGAL and the importance of developing adaptation measures to minimize the impacts of climate change to sustainable development.

91. The above activities will be undertaken by the Vulnerability and Adaptation Assessment TWG(VAATEG). This group will be responsible for preparing the report on Vulnerability and Adaptation Assessment, including the draft National Adaptation Strategy to Climate Change, which will form an integral part of Senegal’s SNC.

92. 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 integrated assessment modelling (e.g., WEAP and other models) 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 this group, 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 in the past, and conferences when opportunities arise.

93. 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 needed to be strengthened.

94. Further constraints and specific financial, technical and institutional needs for capacity building on vulnerability and adaptation options analysis and on the development of adaptation measures during the implementation of this proposed project will be identified and highlighted.
Major outputs:

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

(i) A comprehensive report on Vulnerability and Adaptation Assessment;
(ii) The proposals to a research programme;
(iii) A draft National Adaptation Strategy to Climate Change including identification of adaptation options based on cost-benefit analysis;
(iv) The reports of the workshops including major papers presented;
(v) Strengthened human, scientific, technical and institutional capacity;
(vi) A chapter on V&A for inclusion in the SNC.

Programmes to Mitigate Climate Change

Previous Activities

96. For the first national communication, a program was developed with the assistance of UNEP Risoe to define the strategies to reduce the emission of GHGs in the energy, industry, transportation, waste and forestry sectors, by using models such as LEAP and the COMAP. Different projects were identified and elaborated. The INC process allowed Senegal to be well armed to work on the potential projects of the MDGs. Some activities have been led with UNEP to see the opportunities of technologies transfers in the sector of the industry and in the sector of the forestry, a program on the sequestration of carbon in soil has been financed by the USAID.

Proposed activities:

97. The first priority 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 choice of appropriate models will be one of the essential components for this proposed activity. The appropriate analytical tools and methodologies for formulating and prioritizing the programs containing measures to mitigate climate change within the framework of sustainable development objectives of country with considering social, economic and environmental factors will be chosen.

98. For this programme, the following activities will be undertaken:

(a) Improvement of mitigation analysis by disaggregating activities at the sectoral level. This will include:

(i) Data collection and analysis on energy end-use and energy distribution in various socioeconomic sectors (e.g., buildings, construction, equipment; internal and street lighting, transport, diversification, industry, etc);
(ii) Assessment of effects of sustainable land management by involving local communities;
(iii) Quantification of fluorine gas emissions and their reduction in industrial sector and associated economic cost;
(iv) In-depth cross-cutting analysis of available project proposals, including the identification of economic opportunities and conditions for technology transfer; and
(v) 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:

(i) A review of existing national energy policy on these sectors;
(ii) Analysis of present priorities and existing target for GHG emission reduction measures, their cost and feasibility;
(iii) Expansion and updating of existing database of technological projects on GHG emission reduction;
(iv) An assessment of impact of the potential technological projects on emission reduction;
(v) Identification of standard procedures, practice and mechanism for verifying project performance and emissions reduction.

(c) Development of legal and economic instruments for mitigation measures: This will include:

(i) Analysis of existing legal and economic systems and their barriers to emission reduction;
(ii) Identification and analysis of appropriate legal (e.g., law and legislation) and economic (e.g., tax incentives) instruments for stimulation of actions and investments;
(iii) Simplification of development process, including submission and acceptance of the projects proposals to GEF operational focal point of the Government;
(iv) Development and performance of projects;
(v) Raising 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.

99. A list of national measures to mitigate climate change will be developed, and reviewed by the PMT and other national experts and then in a national workshop with the participation of all relevant stakeholders before its submission to the DENV for review and approval. In particular, it is important to involve the policy makers and the public, including press media, throughout the process. The adoption of such measures on GHG emission reduction will facilitate the development of future legal instruments 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, paragraph 4 and 7, of the UNFCCC, decisions 7/CP.7, 10/CP.7 and 17/CP.8.

100. Three workshops will be organized during the activity cycle (start, mid term, and end).

101. 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 will be invited to participate in these workshops, so as to enhance their awareness on the importance of GHG mitigation reduction in sustainable development.

102. The above activities will be undertaken by the Mitigation Analysis TWG (MATWG). This group will be responsible for preparing the report on Mitigation Analysis that will form an integral part of the SNC. This group will work closely with the GITEG.

103. 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 MATWG members. 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 Risoe Center for Energy, Climate and Environment based in Denmark will be tapped in this area. In order to broaden the experiences of the TEG, 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.

104. The capacity for these 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.

105. 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.

106. The following literature will be consulted:

(i) Technologies, Policies and Measures for Mitigating Climate Change (IPCC Technical Paper I);
(ii) Greenhouse Gas Mitigation Assessment: A Guidebook by the U.S. Country Studies Programme; and

107. For mitigation assessment it will be necessary to use the model ENPEP (“Energy and Power Evaluation Program”) and other models.

108. Several project activities are planned which include the development of project ideas into project proposals with financial support from development partners. These projects include those in the areas of food, electricity generation – cogeneration and renewable energy, transport, and forestry. These may be done outside the national communications. However other projects ideas in
the same socio-economic sectors as above will the explored within the framework of the national communications

**Major outputs:**

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

   (i) A report that contains the least-cost mitigation options and emission reduction trends and projection up to 2020;
   (ii) A list of measures to mitigate climate change;
   (iii) The reports of the workshops including major papers presented;
   (iv) Strengthened human, scientific, technical and institutional capacity;
   (v) A list of mitigation projects with cost for implementation;
   (vi) A chapter on GHG mitigation for inclusion in second national communication.

**Integrating Climate Change Considerations into Social, Economic and Environmental Policies and Actions**

110. Climate change has still not been generally regarded as a major concern in Senegal in view of its major focus on economic development. There is a lack of linkage of existing climate change programmes to national sustainable development plan 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:**

111. The consultation processes preceding preparation of this proposal indicated that there is an urgent need to review steps taken if any by Government or local communities to integrate climate change considerations into relevant social, economic and environmental policies and actions.

112. The national consultation process proposed that 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.

113. In particular, the results of the vulnerability and adaptation assessment in various socio-economic sectors must be conveyed to the national planning authority, 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.

114. There is a need to review and analyze 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 will be developed.

115. 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;

116. The above activities will be undertaken by the PMT with the assistance of the TEGs.

**Major outputs:**

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

   (i) Proposals to integrate climate change considerations into social, economic and environmental policies and actions;
   (ii) The report of the training workshop that include the papers presented;
   (iii) Strengthened human, scientific, technical and institutional capacity.

**Development and Transfer of Environmentally Sound Technologies**

118. These activities constitute one of the important elements of the United Nation Framework Convention on the Climate Change and they promote the strengthening of the technical capacities
and the access to the scientific and technical information on the appropriate technologies suitable to combat climate change.

**Previous activities**

119. As part of the second phase of the enabling activities, Senegal identified its technological needs in the following sectors:

**Renewable energy:**
- **Solar energy**
  - The photovoltaic technology: the energy coming from this system is the result of the direct conversion of light in electricity thanks to solar cells.
  - The thermal path whose principle is the conversion of the energy of the photons that composes the solar radiance in heat. It is applied in the case of the solar water heater and the food driers.
- **Wind energy**
  120. The wind power technological applications exist but are yet exploited in Senegal. They include:
    - Multipale wind, about thirty in the region of Louga;
    - Traditional wind mills (finalized at the ESP of Dakar);

**Hydropower**

OMVS and OMVG are being implemented.

**Biomass**

- The biogas or the methane generation from the fermentation of the organic wastes used to produce energy
- The Electric energy production from the agricultural wastes: SONACOS, CSS,

**Agro-forestry:**

121. Under planted Cultures, under planted animal Production, Agro forests, agro forestry techniques in linear disposition, sequential techniques in agro forestry. One can note that among all these techniques, these are those of the agro forestry in linear disposition that are the most used in Senegal even though the other types of techniques are actually present, especially the techniques in sequential agro forestry and the Under planted cultures.

**Forestry:**

These technologies are achieved to increase the agricultural and forest productions in the natural habitat of Senegal. These activities are:
- Combating erosion;
- Improvement of the fertility of soils;
- Combating salinisation of soils;
- Reduction of the rate of deforestation.

**Industry.**

122. Senegal developed some efficient strategies of transfer of technology at the industrial sector level in the oil, agro-food, cement, building and the chemical industries.

123.

**Proposed activities:**

124. During the second communication, the stress will be put on the technologies of adaptations, the autochthonous technologies, their development and the obstacles of their use to the national level. The strategies of promotion of using these technologies will also be discussed. Also, through the actions led by the secretariat of the convention, a data base has been developed to inform on the new technologies, their origin and their costs. It will be about identifying the real processes of acquiring these technologies, as the efforts made in this sense and the difficulties met in this disposition.

125. The activities relating to the transfer of, and access to, ESTs and know-how, the development and enhancement of endogenous capacities will be analyzed.
126. This activity will revise the criteria for assessment and selection of priority technological needs in the SENEGAL, including the cost-effectiveness of the technologies and the opportunities for their application, and link future activity on technology development and transfer to the national strategy of sustainable development.

127. 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.

128. The above activities will be undertaken by the Environmentally Sound Technologies TWG(ESTTEG), which will be responsible for preparing the report on the ESTs transfer.

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

**Major outputs:**

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

   (i) A comprehensive report on technology needs assessment;

   (ii) A database for ESTs;

   (iii) Technology information networks;

   (iv) Strengthened human, scientific, technical and institutional capacity.

**Research, Systematic Observation and Early Warning Systems**

**Previous activities**

131. The consultation process noted that due to a lack of resources, the special research programmes in the area of the climate change are not many. The university Cheikh Anta Diop through the Laboratory of Applied Physics and the ISE trains the students in the domain of the Climate change. But the research deserves to be reinforced through the acquirement of tools and models of follow-up of the climate. The laboratory of LPA, as part of these intercollegiate researches, now works in addition to the global models (GCM), on the regional models (RCM) on the climate change to appreciate well the climatic variation at the sub regional even at the country level.

132. The national Department of the Meteorology also does some studies on the natural disasters of meteorological origin. A compilation of the extreme meteorological phenomena, which had affected Senegal as well as the consequences, has been established. In the other respect, at a national level, a being carried out program on the precocious alert system is present. The national meteorology has means of surveillance of the atmosphere that require to be reinforced. Among these means, we can mention, the existence of one radar doppler, acquired as part of the national programs of generated rains, of satellite pictures every 15 minutes with the MSG, of observation data, of seasonal forecast every three months. However, the network of observation requires to be reinforced in order to have more precise regular data.

133. 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. 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. The national consultative process concluded 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 SENEGAL.

134. The data on climate change research and systematic observation performed or going on now in country will be assessed. It includes the existing and planned activities in meteorological, hydrological and climatic research and observation.

**Proposed activities:**
It is suggested that the second national communication project should fill in the gaps and strengthen existing institutional and technical capacity. The following activities are proposed:

(i) 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;

(ii) Analysis of existing barriers for development of observation systems and research;

(iii) 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;

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

The above activities will be undertaken by the Research and Systematic Observation TWG(RSOTEG). This group will be responsible for preparing the report on this component that will form an integral part of the SNC.

Although there are some existing capacity for research and systematic observation, institutional strengthening and technical capacity-building in these areas are still very much needed, especially training or further 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, among others.

The participation in sub regional, regional/international workshops on research and systematic observation will be encouraged when opportunities arise.

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.

The major outputs of this proposed activity will be:

(i) A National Information Report on research and systematic observation;

(ii) The report of the workshop including major papers presented.

(iii) Strengthened human, scientific, technical and institutional capacity.

Workshops on information and public awareness were held at the national level as part of a regional project coordinated by ENDA on information on transfer of technology via the internet. Four workshops were held nationwide with one of them involving the active participation of journalists. It provided an opportunity to make available to them, basic information on the key provisions of the UNFCCC.

In addition, the public consultation within the NAPA process provided an opportunity to share with the populations of the rural area on the UNFCCC. A need of information on this convention and these opportunities are really being obvious there. It will be question of seeing in the second communication how to reinforce these actions of information, particularly to a decentralized level.

Moreover, concerning the network of the Senegalese Parliamentarians there are held for two years, annual workshops of exchanges with the deputies on the conventions of Rio and their implementation in Senegal.
146. Our Department as focal point, on Climatic Change, intervened in these meetings. However, a better way of information and public awareness stands out, as regard to the complexity of the discussed topics as part of the convention on the climate and its Protocol of Kyoto.

147. Various publications related to climate change have been widely disseminated throughout the country and made known to government bodies, ministries, departments and NGOs. However, the general level of public awareness on the complex issues of climate change remains insufficient. Thus, it is planned to increase public awareness in this proposed project.

Proposed activities:

148. The data on activities relevant to climate change education, training and public awareness performed within educational institutions, or mass media will be investigated. The mass media will be used to assist in creating public awareness. In addition, public access to information on climate change and its effects will be promoted.

149. 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, among others, “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.

150. In Senegal, despite preliminary efforts, the general level of public awareness on the complex issues of climate change remains insufficient, even among policy-makers. Therefore, in this project it is planned the development of 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 and planners. Journalists and the mass media (television, radio and newspapers) will be used to assist in creating public awareness in the local languages. In addition, public access to information on climate change and its effects will be promoted.

151. The following specific activities are proposed:

(i) A workshop will be organized for all relevant stakeholders (policy makers, NGOs and community groups) to raise their awareness on issues relating to climate change and sustainable development;

(ii) 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 will be used as sources of information for outreach activities where appropriate.

(iii) A CLIMATE CHANGE Web site devoted to climate change activities in SENEGAL 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;

152. The above activities will be undertaken by the Education, Training and Public Awareness TWG(ETPATEG) 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.

153. In order to broaden the experiences of the all project groups, selected members will be sent to participate in relevant sub regional, regional and international training workshops relating to Article 6 of the UNFCCC.

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

155. The major outputs of this proposed activity will be:
   (i) Proposals for educational and public awareness programmes at national and provincial levels;
   (ii) Outreach materials in English;
   (iii) Climate change web site devoted to climate change activities in Senegal;
   (iv) Strengthened human, scientific, technical and institutional capacity.

Information and Networking

156. The stocktaking exercise showed that it is urgent and important to access to and use of information technology such as Internet in conducting climate change activities.

Proposed activities:

157. The activities to promote information sharing among interested parties in the country and to activate international cooperation with the purpose of global warming mitigation will be investigated and promoted.

158. 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.

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

160. The above activities will be undertaken by the PMT with the assistance of the TEGs.

Major outputs:

161. The major outputs of this proposed activity will be:
   (i) Strengthened human, scientific, technical and institutional capacity in information networking;
   (ii) A list of national experts for SNC.

Capacity-Building

162. During the preparation of the first national communication, training received by national experts led to the use of different models for carrying out mitigation and vulnerability and adaptation assessments. Seminars were also held on opportunities provided by implementing the convention, particularly as they relate to the development of mechanisms to address climate change.

163. Although the Initial National Communication project has provided some opportunities for capacity building, it is clear that the development of “human, scientific, technological, organizational, institutional and resources capabilities” of Senegal to address issues relating to climate change is still needed. Indeed, without capacity-building at all levels, activities relating to climate change in SENEGAL will not proceed satisfactorily. 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 the element for capacity building.
Proposed activities:

164. The actual conditions of implementation of the national capacity-building activities will be analyzed.

165. Capacity building is defined by Agenda 21 as “denoting the development of a country’s human, scientific, technological, organizational, 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 COP7 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.

166. Capacity-building activities will be undertaken at different levels – from the project team members to all the stakeholders. Capacity building activities will 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.

167. In view of the large number of multilateral environmental agreements, it would be appropriate to seek to maximize the synergies for implementing the UNFCCC and other global environmental agreements, such as Convention on Biological Diversity (CBD) and UNCCD from a sustainable development perspective.

168. A list of measures for capacity-building will be developed to guide all capacity-building activities in the future, such as:
   (i) Capacity for integrated impact assessments involving different sectors;
   (ii) Training of national experts on the use of models and methodologies developed by the IPCC;
   (iii) Training on ways of integrating climate considerations in national planning
   (iv) Strengthening of the national capacities to implement the Kyoto mechanisms;
   (v) Strengthening of the national observation networks,
   (vi) Strengthening of national capacities in research on climate change impacts at the national level
   (vii) Strengthening national climate change office and UNFCCC focal point to facilitate effective implementation of the Convention including preparation of national communication and optimum participation in the Kyoto Protocol process;
   (viii) Developing an integrated implementation programme which takes into account the role of research and training in capacity building;
   (ix) Strengthening existing and, where necessary, establishing national research and training institutions in order to ensure the sustainability of the capacity-building programmes.

169. The above activities will be undertaken by the PMT with the assistance of the TEGs.

Major outputs:

170. The major outputs of this proposed activity will be:
   (i) Strengthened human, scientific, technical and institutional capacity at all levels on all issues relating to climate change;
   (ii) A list of measures for capacity-building.

Constraints & Gaps; Related Financial, Technical & Capacity Needs

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

172. A sustainable activity will allow presenting 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). Development of proposals to apply adaptation measures will be accompanied by practical steps to prepare pilot / demonstration project proposals and propose them for financing.

173. Also there is a need in 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:

(i) Search, collection and regular updating of information at the national level (technological needs, project proposals);

(ii) 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;

(iii) Securing the sustainability of projects with a view to achieving the global objective of the UNFCCC.

174. The above activities will be undertaken by the PMT with the assistance of the TEGs.

**Major results:**

175. The major outputs of this activity will be:

(i) Proposal for establishment of a National Climate Change Office

(ii) Results of assessment of juridical, financial and technological constraints and barriers to implementation of UNFCCC activities.

**Technical Assistance**

**Proposed activities:**

176. 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.

177. Technical support from other national, regional or international organizations and consultants will also be sought where and when necessary and appropriate. In particular, training workshop on the application of integrated assessment methodologies, including integrated assessment modelling (e.g., WEAP or other models) 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.
Compilation and Production of Second National Communication

Proposed activities:

178. The executive summary and the SNC will be compiled, edited and prepared, under the coordination of the DENV and PMT. It will involve all members of the TEGs, each of which will prepare the relevant sections/chapters of the SNC.

179. The proposed structure of the SNC is as follow:

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 ESTs

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

180. The SNC will be reviewed by the 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 and NGOs, will then be organized to review this revised draft national communication before it is finalized and submitted to the UNFCCC Secretariat.

181. Translation of the SNC into English will be needed.

Major output:

182. The major output of this component will be a comprehensive SNC to be submitted to the UNFCCC Secretariat in 2008.

Institutional Framework for Project Implementation

183. For implementing the project successfully, NPC shall operate under the guidance of NCCC and the PMT and the TEGs for preparation of the SNC shall be established. The NPC will organize and execute activities related to climate change. The TEGs will comprise six groups (see figure 1):

(i) GHG Inventory,

(ii) Vulnerability and Adaptation Assessment,

(iii) Mitigation Analysis,
(iv) Research and Systematic Observation,
(v) Education, Training and Public Awareness,
(vi) Environmentally Sound Technologies.

The NPC and the leaders of each group will form the PMT.
Table 4: Timeline for the Implementation of Project Activities

<table>
<thead>
<tr>
<th>Activities in the Second National Communication</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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<tr>
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<tr>
<td><strong>II. National Circumstances</strong></td>
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<tr>
<td>2.1. Analysis and description of national and as appropriate regional priorities and circumstances including a description of institutional arrangements to ensure continuity in the process of preparing national communications and other national reports.</td>
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<tr>
<td>2.2. Constitution of a Project Management Team:</td>
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<td>2.3. Organization of Project Initiation Workshop</td>
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<tr>
<td>2.4 Establishment of the National Project Advisory Committee (NPAC)</td>
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<tr>
<td><strong>III. National GHG Inventories</strong></td>
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<tr>
<td>3.1. Data collection up to the year 2000 for the estimation of CO₂, N₂O, CH₄, NOₓ, CO, NMVOC, SO₂ as well as for HFCs, PFCs and SF₆</td>
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<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 on national inventories.</td>
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<tr>
<td>3.3. In-depth review of GHG emissions from all relevant sources in agriculture and waste sectors (at the provincial level) and energy sector (on sub-sectoral level)</td>
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<tr>
<td>3.4. Development of emission factors for the estimation of carbon dioxide emissions and sinks from soils in land use change and forestry sector and methane emissions from agricultural soils (Development of project proposals)</td>
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<tr>
<td>3.5. Establishment and maintenance of a database for CO₂, N₂O, CH₄ and other greenhouse gases as appropriate</td>
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<tr>
<td>3.6. Projection of GHG emission trends up to 2020</td>
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<td>3.7. Preparation of the National Inventory Report (NIR), including identification of follow-up activities</td>
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<tr>
<td>3.8. Organisation of three 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>
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Table 4: Timeline for the Implementation of Project Activities

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<th>Activities in the Second National Communication</th>
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<tr>
<td>3.9. Organization of training workshop on IPCC Good Practice Guidance and Uncertainty Management of National GHG Inventory</td>
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<tr>
<td>3.10. Strengthening technical capacity of national experts through participation in programmes of the regional capacity building project for improving the quality of GHG Inventories</td>
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<tr>
<td>3.11. Technical capacity-building, including participation in the subregional/regional/international training workshops on GHG inventory</td>
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</table>

IV. General Description of Steps

4.1. Assessment of climate variability and climate change, including their trends

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.

4.3. Trend analysis and construction of scenarios for relevant sectors.

4.4. Vulnerability assessments, including modelling, where appropriate

4.5. Climate change impact assessment, including modelling for all relevant socio-economic sectors such as water resources, coastal zones, agriculture, etc.

4.6. Development of recommendations on zoning for agriculture needs. Identification of risk zones (construction of maps using GIS)

4.7. Development of the National Strategy on Adaptation to Climate Change including the preparation of detailed project outlines in all relevant sectors of the economy for further elaboration in future studies.

4.8. Analysis of the activities 4.1 – 4.7, identification of gaps and unresolved problems. Development of the proposals to carry out a research programme concerning assessment of impact and measures of adequate adaptation to climate change in all relevant

4.9. Programmes to mitigate climate change, including:
Table 4: Timeline for the Implementation of Project Activities

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<tr>
<td>4.9.1. Projection of emission reduction up to 2020 based on improved GHG data for the following sectors: energy, industrial processes, agriculture, land use change and forestry, and waste</td>
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<td>4.9.2. Improvement of mitigation analysis by disaggregating activities at the sectoral level</td>
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<tr>
<td>4.9.3. Assessment of mitigation measures in energy efficiency and conservation in industrial, commercial and residential sectors</td>
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<td>4.9.4. Development of legal and economic instruments for mitigation measures.</td>
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<tr>
<td>4.9.5. Development of measures to mitigate climate change</td>
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<tr>
<td>4.10. Organisation of three 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 <em>National Strategy on Adaptation to Climate Change.</em></td>
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<td>4.11. Capacity-building, including participation in the subregional/ regional/ international training workshops on integrated assessment modelling / mitigation measures analysis (for 3 years)</td>
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V. Other Relevant Information

| 5.1. Integrating climate change considerations into social, economic and environmental policies and actions | | | | | | | | | | | |
| 5.2. Environmentally Sound Technologies (ESTs) | | | | | | | | | | | |
| 5.3. Research, systematic observations and early warning systems | | | | | | | | | | | |
| 5.4. Education, training and public awareness | | | | | | | | | | | |
| 5.5. Information and Networking | | | | | | | | | | | |
| 5.6. Capacity Building | | | | | | | | | | | |

VI. Constraints and Gaps; related financial, technical and capacity needs

<p>| 6.2. Projects proposed for financing or in preparation for arranging support | | | | | | | | | | | |
| 6.3. Opportunities, barriers for implementation of adaptation measures | | | | | | | | | | | |
| 6.4. Country-specific technology needs and assistance received | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th>Activities in the Second National Communication</th>
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<tr>
<td><strong>VII. Technical Assistance</strong></td>
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<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 regions</td>
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<tr>
<td>7.2. Assessment of suitability and possible application of economic models in DRC, including cost-benefit analysis. Organization of a training workshop with assistance by an international consultant</td>
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<td><strong>VIII. Compilation, Production of Communication, incl. Executive Summary and Its Translation</strong></td>
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<tr>
<td>8.1. Compilation of the Second National Communication</td>
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<tr>
<td>8.2. Organization of a national workshop on discussion and presentation of the SNC, collection of stakeholders comments</td>
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<td>8.3. Finalization of the project report, preparation of the SNC summary</td>
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<tr>
<td>8.4. Publication of the final version of the SNC in both French and English</td>
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<td><strong>IX. Project Management</strong></td>
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<td>9.1. Project Manager</td>
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<td>9.2. Administrative Assistant</td>
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<td>9.3. Accountant (part-time)</td>
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<td>9.4. Independent Audit</td>
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<td>9.5. Staff Travel</td>
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<td>9.6. Equipment (2 PCs+ laser printer) including consumables and logistic expenses for 3 year</td>
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<td>9.7. Communication</td>
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<td><strong>X. Monitoring and Reporting</strong></td>
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<td>Activities in the Second National Communication</td>
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<td></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 on national inventories</td>
<td>2 000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.3. In-depth review of GHG emissions from all relevant sources</td>
<td>3 000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.4. Development of emission factors for the estimation of carbon dioxide emissions and sinks from soils in land use change and forestry sector and methane emissions from agricultural soils (Development of project proposals)</td>
<td>0</td>
<td>2 000</td>
<td>0</td>
</tr>
<tr>
<td>3.5. Establishment and maintenance of a database for CO₂, N₂O, CH₄ and other greenhouse gases as appropriate</td>
<td>0</td>
<td>5 000</td>
<td>3 000</td>
</tr>
<tr>
<td>3.6. Projection of GHG emission trends up to 2020</td>
<td>0</td>
<td>1 000</td>
<td>0</td>
</tr>
<tr>
<td>3.7. Preparation of the National Inventory Report (NIR), including identification of follow-up activities</td>
<td>2 000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3.8. Organisation of two workshops (in the beginning, and in the end of project) for the Inventory group and stakeholders. Presentation of the NIR at the end-of-project workshop.</td>
<td>5 000</td>
<td>5 000</td>
<td>0</td>
</tr>
<tr>
<td>3.9. Organization of training workshop on IPCC Good Practice Guidance and Uncertainty Management of National GHG Inventory</td>
<td>5 000</td>
<td>0</td>
<td>0</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>4 000</td>
<td>4 000</td>
<td>0</td>
</tr>
<tr>
<td>Activities in the Second National Communication</td>
<td>Amount, US$</td>
<td></td>
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<tr>
<td>-----------------------------------------------</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>2006</td>
<td>2007</td>
<td>2008</td>
</tr>
<tr>
<td>3.11. Technical capacity-building, including if possible participation in the subregional/regional / international training workshops on GHG inventory</td>
<td>4 000</td>
<td>4 000</td>
<td>0</td>
</tr>
<tr>
<td>IV. General Description of Steps</td>
<td>45 000</td>
<td>59 000</td>
<td>29 000</td>
</tr>
<tr>
<td>4.1. Assessment of climate variability and climate change, including their trends</td>
<td>2 000</td>
<td>2 000</td>
<td>0</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</td>
<td>7 000</td>
<td>2 000</td>
<td>0</td>
</tr>
<tr>
<td>4.3. Trend analysis and construction of scenarios for relevant sectors including agricultural development</td>
<td>6 000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4.4. Vulnerability assessments, including modelling, where appropriate</td>
<td>8 000</td>
<td>6 000</td>
<td>2 000</td>
</tr>
<tr>
<td>4.5. Climate change impact assessment, including modelling for all relevant socio-economic sectors such as water resources, coastal zones, agriculture, etc</td>
<td>11 000</td>
<td>3 000</td>
<td>0</td>
</tr>
<tr>
<td>4.6. Development of recommendations on zoning for agriculture needs. Identification of risk zones (construction of maps using GIS)</td>
<td>2 000</td>
<td>6 000</td>
<td>0</td>
</tr>
<tr>
<td>4.7. Development of the National Strategy on Adaptation to Climate Change including the preparation of detailed project outlines in all relevant sectors of the economy for further elaboration in future studies.</td>
<td>0</td>
<td>4 000</td>
<td>0</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 carry out a research programme concerning assessment of impact and measures of adequate adaptation to climate change in all relevant sectors</td>
<td>0</td>
<td>4 000</td>
<td>2 000</td>
</tr>
<tr>
<td>4.9. Programmes to mitigate climate change, including:</td>
<td>0</td>
<td>4 000</td>
<td>2 000</td>
</tr>
<tr>
<td>4.9.1. Projection of emission reduction up to 2020 based on improved GHG data for the following sectors: energy, industrial processes, agriculture, land use change and forestry, and waste</td>
<td>0</td>
<td>4 000</td>
<td>2 000</td>
</tr>
<tr>
<td>4.9.2. Improvement of mitigation analysis by disaggregating activities at the sectoral level</td>
<td>0</td>
<td>3 000</td>
<td>3 000</td>
</tr>
<tr>
<td>4.9.3. Assessment of mitigation measures in energy efficiency and conservation in industrial, commercial and residential sectors</td>
<td>0</td>
<td>5 000</td>
<td>5 000</td>
</tr>
<tr>
<td>4.9.4. Development of legal and economic instruments for mitigation measures.</td>
<td>0</td>
<td>2 000</td>
<td>2 000</td>
</tr>
<tr>
<td>4.9.5. Development of measures to mitigate climate change</td>
<td>0</td>
<td>2 000</td>
<td>2 000</td>
</tr>
<tr>
<td>Activities in the Second National Communication</td>
<td>Amount, US$</td>
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<td>-----------------------------------------------</td>
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</tr>
<tr>
<td>4.9.6 Develop a baseline GHG emission scenario for energy sector for 200 - 2030 by using a top - down model)</td>
<td>0 1500 0 0 1,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.9.7 General Description of Steps (Revise list of the GHG abatement measures/technology options already developed under TNA)</td>
<td>0 500 0 0 500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.9.8 General Description of Steps (Identify barriers and policy needs for implementation of the prioritized measures)</td>
<td>0 1,000 1,000 2,000</td>
<td></td>
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</tr>
<tr>
<td>4.9.9 General Description of Steps (Prepare a draft National Strategy on Climate Change Mitigation)</td>
<td>0 0 2,000 0 2,000</td>
<td></td>
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<tr>
<td>4.9.10 General Description of Steps (Prepare draft chapter, circulate and incorporate comments to finalize chapter on Measures to Mitigate Climate Change)</td>
<td>0 0 4,000 4,000</td>
<td></td>
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<tr>
<td>4.10. Organisation of two workshops (in the beginning, and one at the end of project) for the vulnerability and mitigation groups and stakeholders. Presentation of the draft National Strategy on Adaptation to Climate Change</td>
<td>4000 8 000 4000 0 16 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.11. Capacity-building, including participation in the subregional/ regional/ international training workshops on integrated assessment modelling / mitigation measures analysis (for 3 years)</td>
<td>5 000 5 000 0 0 10 000</td>
<td></td>
<td></td>
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<tr>
<td>V. Other Relevant Information</td>
<td>11 000 19 000 17 000 0 47 000</td>
<td></td>
<td></td>
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<tr>
<td>5.1.Integrating climate change considerations into social, economic and environmental policies and actions</td>
<td>0 0 3 000 0 3 000</td>
<td></td>
<td></td>
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<tr>
<td>5.2. Environmentally Sound Technologies (ESTs) summarising the results of studies</td>
<td>0 1 000 1 000 0 2 000</td>
<td></td>
<td></td>
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<tr>
<td>5.3. Research, systematic observations and early warning systems</td>
<td>3000 2 000 0 0 5 000</td>
<td></td>
<td></td>
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<tr>
<td>5.4. Education, training and public awareness</td>
<td>4000 6 000 6 000 0 16 000</td>
<td></td>
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<tr>
<td>5.5. Information and Networking</td>
<td>0 6 000 4 000 0 10 000</td>
<td></td>
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<tr>
<td>5.6. Capacity Building</td>
<td>4 000 4 000 3 600 0 11 600</td>
<td></td>
<td></td>
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<tr>
<td>VI. Constraints and Gaps; related financial, technical and capacity needs</td>
<td>0 4 000 6 000 0 10 000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.2. Projects proposed for financing or in preparation for arranging support</td>
<td>0 1 000 3 000 0 4 000</td>
<td></td>
<td></td>
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<tr>
<td>6.3. Opportunities, barriers for implementation of adaptation measures</td>
<td>1 000 1 000 0 2 000</td>
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<td></td>
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<tr>
<td>6.4. Country-specific technology needs and assistance received</td>
<td>2 000 2 000 0 4 000</td>
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<td></td>
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<tr>
<td>VII. Technical Assistance</td>
<td>0 30 000 0 0 30 000</td>
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<tr>
<td>Activities in the Second National Communication</td>
<td>Amount, US$</td>
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<td></td>
<td>2006</td>
<td>2007</td>
<td>2008</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 regions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.2. Assessment of suitability and possible application of economic models in Senegal, including cost-benefit analysis. Organization of a training workshop with assistance by an international consultant</td>
<td></td>
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<tr>
<td>VIII. Compilation, Production of Communication, incl. Executive Summary and Its Translation</td>
<td>0</td>
<td>0</td>
<td>7 000</td>
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<tr>
<td>8.1. Compilation of the Second National Communication</td>
<td></td>
<td></td>
<td>1 000</td>
</tr>
<tr>
<td>8.2. Organization of a national workshop on discussion and presentation of the SNC, collection of stakeholders comments</td>
<td></td>
<td></td>
<td>6 000</td>
</tr>
<tr>
<td>8.3. Publication of the final version of the SNC in both French and English</td>
<td></td>
<td></td>
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<tr>
<td>IX. Project Management</td>
<td>22 150</td>
<td>23 050</td>
<td>23 300</td>
</tr>
<tr>
<td>9.1. Project Manager</td>
<td>9 000</td>
<td>12 000</td>
<td>12 000</td>
</tr>
<tr>
<td>9.2. Administrative Assistant</td>
<td>4 500</td>
<td>6 000</td>
<td>6 000</td>
</tr>
<tr>
<td>9.3. Accountant (part-time)</td>
<td>600</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>9.4. Independent Audit</td>
<td>0</td>
<td></td>
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</tr>
<tr>
<td>9.5. Staff Travel</td>
<td>3000</td>
<td>3 000</td>
<td>3 000</td>
</tr>
<tr>
<td>9.6. Equipment (2 PCs+ laser printer) including consumables and logistic expenses for 3 year</td>
<td>4 000</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>9.7. Communication</td>
<td>800</td>
<td>1 000</td>
<td>1 000</td>
</tr>
<tr>
<td>X. Monitoring and Evaluation</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>TOTAL:</td>
<td>125,550</td>
<td>163,350</td>
<td>76,950</td>
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<tr>
<td>ACTIVITIES</td>
<td>INDICATORS</td>
<td>OUTPUTS</td>
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<tr>
<td>------------</td>
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<td></td>
</tr>
<tr>
<td><strong>II. NATIONAL CIRCUMSTANCES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development priorities, objectives and circumstances, etc.</td>
<td>• Compilation of description of national and regional development priorities, objectives and circumstances relating to climate change and its adverse impacts</td>
<td>• Relevant information provided on the socio-economic and environmental conditions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing arrangements for preparing communications continuously</td>
<td>• List of existing institutions involved with the preparation of national communications</td>
<td>• Roster produced on all existing institutions involved with the preparation of the national communications • Terms of Reference produced for the various committees involved with the preparation of the national communications</td>
<td></td>
</tr>
<tr>
<td><strong>III. NATIONAL GHG INVENTORIES FOR '90, '94, 2004, AS APPROPRIATE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrangements to collect and archive data for continuous inventory preparation</td>
<td>• Sectoral inventories created for the base years 1994 and 2004</td>
<td>• Est. of thematic working group on GHG inventory • Database for inventory updating • Updated and improved inventory data for emissions for 2004 • Updated, improved, and user-friendly GHG inventory database • Updated GHG report, including technical annexes with the inventory procedures and calculations • Review Workshop Report, including major conclusions and recommendations • Strengthened human, scientific, technical and institutional capacity to undertake a GHG inventory</td>
<td></td>
</tr>
<tr>
<td>Level of uncertainty associated with inventory data</td>
<td>• Reduction of uncertainties in activity data, measured emission coefficient and thus the overall GHG budgets</td>
<td>• Validation of inventories through QA/QC measures • Identification of constraints and gaps of the IPCC GHG inventory methodology • New activity data for Land-Use Changes and Forestry and Agriculture sectors</td>
<td></td>
</tr>
<tr>
<td><strong>IV. GENERAL DESCRIPTION OF STEPS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steps towards programs to facilitate adequate adaptation</td>
<td>• Reports on adaptation suggesting policy frameworks for implementing adaptation measures</td>
<td>• Policy frameworks for implementing adaptation measures and response strategies put in place for the different sectors</td>
<td></td>
</tr>
<tr>
<td>Vulnerability to adverse effects of climate change &amp; on adaptation</td>
<td>• Reports on vulnerability and adaptation suggesting policy frameworks for implementing adaptation measures and response strategies in different sectors • Summary of the meeting proceedings, and an improved awareness of vulnerability and adaptation issues in Republic of Senegal • Training on the use and development of sector appropriate methodologies relevant for decision-making at all levels</td>
<td>• Policy frameworks on vulnerability and adaptation measures put in place • Project planning guidelines • Review of project activities and the draft NAPA in a final workshop</td>
<td></td>
</tr>
<tr>
<td>Evaluating of strategies and measures for adapting to climate change</td>
<td>• Meeting of experts to be organized on impact on climate change</td>
<td>• Policy directions envisaged in the national communication</td>
<td></td>
</tr>
<tr>
<td>ACTIVITIES</td>
<td>INDICATORS</td>
<td>OUTPUTS</td>
<td></td>
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<tr>
<td>------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>Policy frameworks, etc, for developing and</td>
<td>• Preliminary assessment of potential impacts of climate change on</td>
<td>• Measures and policies to implement adaptation strategies. National</td>
<td></td>
</tr>
<tr>
<td>implementing adaptation strategies</td>
<td>agriculture, health, meteorology/hydrology, forestry, energy, fisheries,</td>
<td>Adaptation Strategy</td>
<td></td>
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<tr>
<td></td>
<td>and gender</td>
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<tr>
<td>Steps to formulate programs to mitigate climate</td>
<td>• Reports on mitigation suggesting policy frameworks for implementing</td>
<td>• Policy framework for implementing mitigation measures put in place</td>
<td></td>
</tr>
<tr>
<td>change</td>
<td>mitigation measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate Change Mitigation Assessment</td>
<td>• Collection, collation, analysis/archiving of data for economy sectors</td>
<td>• Baseline data for socio-economic sectors generated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Training and capacity building for national experts</td>
<td>• Draft Mitigation and Renewable Energy report</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Training on the use of methods, models/tools for generating climate/socio</td>
<td>• Strengthened capacity for mitigation assessment (human/scientific/technical/institutional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>economic scenarios</td>
<td>• Constraints, financial and TNA needs identified</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Preparation of mitigation projects for funding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. OTHER RELEVANT INFORMATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrating climate change considerations into</td>
<td>• Number of proposals to integrate climate change considerations into</td>
<td>• Impacts of the publicity material developed</td>
<td></td>
</tr>
<tr>
<td>social, economic and environmental policies</td>
<td>social, economic and environmental policies and actions</td>
<td>• Proposals to integrate climate change considerations into social,</td>
<td></td>
</tr>
<tr>
<td>and actions</td>
<td>• Training workshops</td>
<td>economic and environmental policies and actions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Number of individuals and institutions identify for capacity building</td>
<td>• Reports of training workshops</td>
<td></td>
</tr>
<tr>
<td>Transfer of, and access to ESTs, development of</td>
<td>• Number of National Report on technology needs assessment</td>
<td>• Human, scientific, technical and institutional capacity strengthened</td>
<td></td>
</tr>
<tr>
<td>endogenous capacities; enabling environments</td>
<td>• Climate change database on ESTs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Number of individuals and institutions identify for capacity building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate change research and systematic</td>
<td>• Number of National Information Report to improve observing systems</td>
<td>• Technology needs assessment Report</td>
<td></td>
</tr>
<tr>
<td>observations</td>
<td>• Number of workshops</td>
<td>• Database established on EST</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>• Technology information networks established</td>
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<tr>
<td></td>
<td></td>
<td>• Human, scientific, technical and institutional capacity strengthened</td>
<td></td>
</tr>
<tr>
<td>Climate change education, training, and public</td>
<td>• Report on climate change education, training and public awareness</td>
<td>• National Information Report to improve observing</td>
<td></td>
</tr>
<tr>
<td>awareness</td>
<td>• Number of training workshops</td>
<td>• Systems Reports of training workshop</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Number of individuals and institutions identify for capacity building</td>
<td>• Number of individuals and institutions identify for capacity building</td>
<td></td>
</tr>
<tr>
<td>Capacity building activities, options and</td>
<td>• Identification of the specific needs, options and priorities for</td>
<td>• Climate Change Education, Training and Public</td>
<td></td>
</tr>
<tr>
<td>priorities</td>
<td>capacity-building such as those identified in the INC and phase II</td>
<td>Awareness Document Produced</td>
<td></td>
</tr>
<tr>
<td></td>
<td>enabling activity projects, PIREP, and other national capacity self-</td>
<td>• Report of training workshops Human, scientific, technical and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>assessment</td>
<td>institutional capacity strengthened</td>
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</tbody>
</table>

**V. OTHER RELEVANT INFORMATION**

- Integrating climate change considerations into social, economic, and environmental policies and actions
- Transfer of, and access to ESTs, development of endogenous capacities; enabling environments
- Climate change research and systematic observations
- Climate change education, training, and public awareness
- Capacity building activities, options, and priorities

**ACTIVITIES**

- Policy frameworks, etc, for developing and implementing adaptation strategies
- Steps to formulate programs to mitigate climate change
- Climate Change Mitigation Assessment

**INDICATORS**

- Number of proposals to integrate climate change considerations into social, economic, and environmental policies and actions
- Number of National Report on technology needs assessment
- Number of National Information Report to improve observing systems
- Number of workshops
- Number of training workshops
- Number of individuals and institutions identify for capacity building
- Reports on mitigation suggesting policy frameworks for implementing mitigation measures
- Climate Change database on ESTs
- Number of National Information Report to improve observing systems
- Number of workshops
- Number of individuals and institutions identify for capacity building

**OUTPUTS**

- Measures and policies to implement adaptation strategies. National Adaptation Strategy
- Policy framework for implementing mitigation measures put in place
- Baseline data for socio-economic sectors generated
- Draft Mitigation and Renewable Energy report
- Strengthened capacity for mitigation assessment (human/scientific/technical/institutional)
- Constraints, financial and TNA needs identified
- Impacts of the publicity material developed
- Proposals to integrate climate change considerations into social, economic and environmental policies and actions
- Reports of training workshops
- Human, scientific, technical and institutional capacity strengthened
- Technology needs assessment Report
- Database established on EST
- Technology information networks established
- Human, scientific, technical and institutional capacity strengthened
- National Information Report to improve observing systems
- Systems Reports of training workshop
- Number of individuals and institutions identify for capacity building
- Climate Change Education, Training and Public Awareness Document Produced
- Report of training workshops Human, scientific, technical and institutional capacity strengthened
- Programs to address climate change, adverse impacts including abatement and sink enhancement initiated
- List of institutions/NGOs identified to Strengthen efforts to increase GHG sinks and undertake measures to take abatement measures.
<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>INDICATORS</th>
<th>OUTPUTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efforts to promote information sharing and networking</td>
<td>• Archival of data base on climate change</td>
<td>• Data centre established for enabling activity</td>
</tr>
<tr>
<td>VI. CONSTRAINTS &amp; GAPS, RELATED FINANCIAL, TECHNICAL, &amp; CAPACITY NEEDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constraints, gaps and needs, and activities for overcoming gaps, etc.</td>
<td>• Programs to ensure preparation and improvement of NCS on continuous basis</td>
<td>• Regular Report on the preparation and Improvement of NCS on continuous basis</td>
</tr>
<tr>
<td>Financial resources and technical support for preparing communications</td>
<td>• Level of support mobilized</td>
<td>• Financial and technical support earmarked</td>
</tr>
<tr>
<td>provided by various sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projects proposed for financing or in preparation for arranging support</td>
<td>• Projects under Article 12, paragraph 4(UNFCCC)</td>
<td>• First National Communications finalized</td>
</tr>
<tr>
<td>Opportunities, barriers for implementation of adaptation measures</td>
<td>• Pilot/demonstration projects</td>
<td>• Pilot/demonstration project executed</td>
</tr>
<tr>
<td>Country-specific technology needs and assistance received</td>
<td>• Report on country Specific technology needs and assessment</td>
<td>• Country specific technology needs and Assessment produced</td>
</tr>
<tr>
<td>VII. TECHNICAL ASSISTANCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contribution of international consultant into trainings on application of</td>
<td>• Report of studies and trainings conducted by international consultants</td>
<td>• Technical back stopping mission executed by international consultant</td>
</tr>
<tr>
<td>integrated impact models and macro-economic models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIII. COMPILATION, PRODUCTION OF COMMUNICATION, INCLUDING EXECUTIVE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUMMARY AND ITS TRANSLATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IX. PROJECT MANAGEMENT (BASED ON 3 YEARS DURATION)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X. MONITORING AND REPORTING</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 1: Institutional arrangement for the preparation of the Second National Communication.
Project Financing

184. 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.

185. 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 the SNC. Despite some past and on-going 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.

186. The contribution of the Government, which will amount to US$ 50,000 during project period, will include some logistical support, basic communication and office facilities, library and information facilities, and others.

Table 7: Summary of Project Budget

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>GEF contribution, US$</th>
<th>Government (in kind), US$</th>
<th>Total, US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. National Circumstances</td>
<td>6,000</td>
<td>2,000</td>
<td>8,000</td>
</tr>
<tr>
<td>2. National GHG Inventories</td>
<td>72,000</td>
<td>9,000</td>
<td>81,000</td>
</tr>
<tr>
<td>3. General Description of Steps</td>
<td>133,000</td>
<td>15,000</td>
<td>148,000</td>
</tr>
<tr>
<td>4. Other Information</td>
<td>47,000</td>
<td>6,000</td>
<td>53,000</td>
</tr>
<tr>
<td>5. Constraints and Gaps</td>
<td>10,000</td>
<td>2,000</td>
<td>12,000</td>
</tr>
<tr>
<td>6. Technical Assistance</td>
<td>30,000</td>
<td>2,000</td>
<td>32,000</td>
</tr>
<tr>
<td>7. Compilation and Production of the SNC</td>
<td>17,000</td>
<td>4,000</td>
<td>21,000</td>
</tr>
<tr>
<td>8. Project Management</td>
<td>75,000</td>
<td>9,000</td>
<td>84,000</td>
</tr>
<tr>
<td>9. Monitoring and Evaluation</td>
<td>15,000</td>
<td>1,000</td>
<td>16,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>405,000</td>
<td>50,000</td>
<td>455,000</td>
</tr>
</tbody>
</table>
SECTION III: WORKPLAN AND TIME TABLE, BUDGET AND FOLLOW UP

187. **Workplan and Timetable:**

   Please see Table 4: *(Timeline for the implementation of project activities)*

188. **Budget.**

   Please see Table 5: *(Budget for Proposed activities for the preparation of the Second National Communication)*
SECTION IV: INSTITUTIONAL FRAMEWORK AND EVALUATION

Institutional framework

189. The Ministry of Environment and Protection of Nature, as the Executing Agency, will be responsible for the implementation of the project in accordance with the objectives and activities outlined in Section 2 of this document. UNEP, as the GEF Implementing Agency, will be responsible for overall project supervision to ensure consistency with the GEF and UNEP policies and procedures, and will provide guidance on linkages with related UNEP and GEF funded activities. The UNEP/DGEF Coordination will monitor implementation of the activities undertaken during the executing of the project. The UNEP/DGEF Coordination will be responsible for clearance and transmission of all financial and progress reports to the Global Environment Facility.

190. Prior to contracts, sub-contracts, or letters of agreement being entered into by the Ministry of Environment and Protection of Nature, the Ministry of Environment and Protection of Nature will submit to UNEP/DGEF Coordination copies of all these documents. Within ten working days, UNEP/DGEF Coordination will review, provide guidance and give the Ministry of Environment and Protection of Nature substantive clearance on the technical content of these contracts, sub-contracts and letters of agreement.

191. In the recruitment of all senior project personnel, a selection panel/committee consisting of representatives from the Ministry of Environment and Protection of Nature and UNEP/DGEF will conduct the evaluation of the candidates, and based on the recommendations of the panel/committee the Ministry of Environment and Protection of Nature will issue contracts whose terms and conditions will be cleared by the panel.

Correspondence:

192. All correspondence regarding substantive and technical matters should be addressed to:

UNEP:

    Olivier Deleuze
    Officer-In-Charge,
    Division of GEF Coordination
    UNEP
    P.O. Box 30552
    Nairobi, Kenya
    Fax: +254-20-624041

With a copy to:

    George Manful
    Senior Task Manager, Climate Change Enabling Activities
    UNEP/GEF
    P.O. Box 30552
    Nairobi, Kenya
    Tel: 254-20-623489
    Fax: 254-20-624041/623162
    E-mail: George.Manful@unep.org

For Senegal:

    Madame Fatima Dia TOURE
    Directeur Environnement et Etablissement Classés (DEEC),
    Ministry of Environment and Protection of Nature Direction
    BP 6557 Dakar, Senegal
    Fax 221 822 62 12
    fdtoure@sentoo.sn
With a copy to:

Monsieur Ndiaye Cheilkh SYLLA  
Directeur Adjoint Environnement et Etablissements Classés  
Coordonnateur Programme Changements Climatiques  
BP 6557 Dakar  
Fax 221 822 62 12  
denv@sentoo.sn

193. All correspondence related to financial administrative and financial matters related to this sub-project should be addressed to:

At UNEP:

Mr. David Hastie  
Chief  
Budget and Financial Management Service (BFMS)  
United Nations Office at Nairobi  
P.O. Box 67578  
Nairobi, Kenya  
Tel: 254-20-623821  
Fax: +254-20-623755

With a copy to:

Mr. Victor Ogbuneke  
Fund Management Officer  
Division of GEF Coordination  
UNEP  
P.O. Box 30552  
Nairobi, Kenya  
Tel: 254-20-623780  
Fax: +254-20-624041/623162

For Senegal:

Madame Fatima Dia TOURE  
Directeur Environnement et Etablissement Classés (DEEC),  
Ministry of Environment and Protection of Nature Direction  
BP 6557 Dakar, Senegal  
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Coordonnateur Programme Changements Climatiques  
BP 6557 Dakar  
Fax 221 822 62 12  
denv@sentoo.sn

194. Evaluation

The Ministry of Environment and Protection of Nature 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. A terminal/final report of the project will be prepared by the Ministry of Environment and Protection of Nature at the end 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 in co-operation with the National Steering Committee will prepare work-plan for project implementation.
SECTION V: MONITORING AND REPORTING

Management Reports

195. Quarterly Progress Reports

Within 30 days of the end of the reporting period, the Ministry of Environment and Protection of Nature will submit to UNEP, using the format given in Annex 4, 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.

196. Terminal Report

Within 60 days following the end of the project, the Ministry of Environment and Protection of Nature shall submit a Terminal Report in the UNEP format (Annex 6) to the Director, Division of GEF Coordination and the Chief, Budget and Financial Management Service and the Chief, Program Coordination and Management Unit. The report should indicate the principal factors, which have determined the success or failures 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.

197. Substantive Reports:

(i) At the appropriate time, the Ministry of Environment and Protection of Nature will submit to UNEP three copies in draft of any substantive project reports(s) and, at the same time, inform UNEP of its plans for publication of that text. UNEP will give the Ministry of Environment and Protection of Nature 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.

(ii) UNEP will equally consider the publishing proposal of the Ministry of Environment and Protection of Nature and will make comments thereon as advisable.

(iii) UNEP may request, the Ministry of Environment and Protection of Nature to consider the publication on a joint imprint basis. Should the Ministry of Environment and Protection of Nature be solely responsible for publishing arrangements, UNEP will nevertheless receive an agreed number of free copies of the published work in each of the agreed languages, for its own purposes.

198. Financial Reports (National Project Expenditure Accounts)

(i) Details of project expenditures will be reported, on an activity by activity basis, in line with project budget codes as set out in the project document, as at 31 March, 30 June, 30 September and 31 December using the format given in Annex 3. All expenditure accounts will be dispatched to UNEP within 30 days of the end of the quarter to which they refer, certified by a duly authorised official of the Ministry of Environment and Protection of Nature.

(ii) In addition the total expenditures incurred during the year ending 31 December certified by a duly authorised official, should be reported in an opinion by a recognized firm of public accountants and should be dispatched to UNEP within 180 days, (i.e. by 30 June). In particular, the auditors should be asked to report whether, in their opinion:

- Proper books of account and records have been maintained;
- All project expenditures are supported by vouchers and adequate documentation;
- Expenditures have been incurred in accordance with the objectives outlined in the project document;
➢ The Expenditure reports provide a true and fair view of the financial condition and performance of the project

(iii) Within 180 days of the completion of the project, Ministry of Environment and Protection of Nature will supply UNEP with a final statement of account in the same format as for the quarterly statement, certified by a recognized firm of public accountants.

If requested Ministry of Environment and Protection of Nature shall facilitate an audit by the United Nations Board of Auditors and/or the Audit Service of the accounts of the project.

(iv) Any portion of cash advances remaining unspent or uncommitted by Ministry of Environment and Protection of Nature on completion of the project will be reimbursed 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, Ministry of Environment and Protection of Nature will be financially responsible for any adverse movement in the exchange rates.

TERMS AND CONDITIONS

199. Inventory of Non-expendable equipment purchased against UNEP projects

The Ministry of Environment and Protection of Nature will 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) purchased with UNEP funds (or Trust funds or Counterpart funds administered by UNEP), and submit an inventory of such equipment to UNEP as at 31 March, 30 June, 30 September, and 31 December 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.

Within 60 days of completion of the project, the Ministry of Environment and Protection of Nature International will submit to UNEP a final inventory of all non-expendable equipment purchased under this project indicating description, serial number, original cost, present condition, location and a proposal for the disposal of the said equipment.

Non-expendable equipment purchased with funds administered by UNEP remains the property of UNEP until its disposal is authorised by UNEP, in consultation with the Ministry of Environment and Protection of Nature.

The Ministry of Environment and Protection of Nature shall be responsible for any loss or damage to equipment purchased with UNEP administered funds. The proceeds from the sale of equipment, (duly authorised by UNEP) shall be credited to the accounts of UNEP, or of the appropriate trust fund or counterpart funds. A duly authorised official of the Ministry of Environment and Protection of Nature should physically verify the inventory.

200. Responsibility for Cost Over-runs

Total Project cost to the GEF Trust Fund cannot exceed the approved budget as shown on page 1 of the project document. Any cost overrun (expenditure in excess of the amount budgeted in each budget sub line) shall be met by the organization responsible for authorizing the expenditure, unless written agreement has been received in advance, from UNEP. In cases, where UNEP has indicated its agreement to a cost overrun in a budget sub line to another, a revision to the project document amending the budget will be issued by UNEP.

201. Claims by Third Parties against UNEP

The Ministry of Environment and Protection of Nature, shall be responsible for dealing with any claims which may be brought by third parties against UNEP and its staff, and shall hold UNEP and its staff non-liable in case of any claims or liabilities resulting from operations carried out by the Ministry of Environment and Protection of Nature, under this National Project document, except where it is agreed by
202. **Cash Advance Requirement**

Initial cash advance of **US$62,775** will be made upon signature of the project document by both parties and will cover expenditures expected to be incurred by the Ministry of Environment and Protection of Nature during the first three months of the project implementation. Subsequent advances are to be made quarterly, subject to:

(i) Confirmation by the Ministry of Environment and Protection of Nature 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 to cover "lead time" for the next remittance; and

(ii) The presentation of

- A satisfactory financial report showing expenditures incurred for the past quarter, under each project activity (See format in **Annex 3**).
- Timely and satisfactory reports on project implementation (**Annex 4**).

Requests for subsequent cash advances should be made using the standard format provided in **Annex 2**.

203. **Amendments**

The Parties to this project document shall approve any modification or change to this project document in writing.

204. **United Nations Security Council Resolution on the fight against terrorism**

The United Nations Security Council Resolution 1373 of 28 September 2001 on the fight against terrorism shall be adhered to by the Executing Agency, failure to which shall, without prejudice to other legal actions, lead to the immediate cancellation of the project.
LIST OF ANNEXES

Annex 1: Budget in UNEP Format (in Microsoft Excel format).

Annex 2: Format for Cash Advance Request with its Appendix 1 to Annex 2 providing additional information for the requested cash advance funding.

Annex 3: Format for Quarterly Expenditure Statement with its Appendix 1 to Annex 3 providing explanatory notes on the reported expenditures.

Annex 4: Quarterly Progress Report Format with its Appendix 1 to Annex 4 for inventory of outputs/services.

Annex 5: Format for Inventory of Non Expendable Equipment

Annex 6: Format for Terminal Report with its Appendix 1 to Annex 6 for the inventory of outputs/services.

Annex 7: Terms of Reference
ANNEX 2: CASH ADVANCE STATEMENT

Statement of cash advance as at:  {Reporting end date}
Cash requirements for the period: From:  {Starting date}   To:   {Ending date}
Name of Executing Agency:  {Insert name of Executing Agency}
Project No.:  IMIS:  GFL-2328-2724-4926
              PMS:  GF/2010-04-83
Project title:  {Insert exact title of the project}

I.  Cash statement

1.  Opening cash balance as at {Insert project commencement date} US$  NIL

2.  Add: cash advances received:

   Number          Date        Amount
   First cash advance {Insert date}  {Insert amount}
   Second cash advance {Insert date}  {Insert amount}
   Third cash advance {Insert date}   {Insert amount}
   Fourth cash advance {Insert date}  {Insert amount}
   Fifth cash advance  {Insert date}  {Insert amount}

3.  Total cash advanced to date US$  {Insert amount}

4.  Less: total cumulative expenditures incurred to date US$  {Insert amount}

5.  Closing cash balance as at US$  (reporting end date)

II.  Cash Requirements forecast

6.  Estimated disbursements for period ending {Insert date} US$  {Insert amount}

7.  Less: closing cash balance (see item 5 above) US$  {Insert amount}

8.  Total cash requirements for period from: {Insert date} to: {Insert date} US$  {Insert amount}

Prepared by: _________________________ Date: _____________________________
Request approved by:__________________ Date: _____________________________

NB: To be completed by duly authorized officials of {Insert name of Executing Agency}
Appendix 1 to Annex 2: EXPLANATIONS ON THE PLANNED USE OF THE REQUESTED FUNDING FOR THE NEXT REPORTING PERIOD BASED ON WHICH THE CASH ADVANCE STATEMENT OF THIS REPORT WAS MADE

Project No. {GFL/2328-2724-4926} Executing Agency: {Insert name of Executing Agency}
Project title: {Insert the full title of the project here}
Project commencing: {Insert commencement date} Project ending: {Insert completion date}

<table>
<thead>
<tr>
<th>DESCRIPTION FOR THE CODES</th>
<th>EXPENDITURE ESTIMATES</th>
<th>CLARIFICATION/BREAKDOWN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100 Project personnel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1200 Consultant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1300 Project administrative personnel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1400 Volunteer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1600 Travel on official business</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2100 Sub-contract (with IAs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2200 Sub-contract (with SOs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2300 Sub-contract (business entity)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3100 Fellowship</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3200 Group training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3300 Meeting/Conference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4100 Expendable equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4200 Non-expendable equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4300 Premises</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5100 Operation and maintenance</td>
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<tr>
<td>5200 Reporting</td>
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<tr>
<td>5300 Sundry</td>
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<tr>
<td>5400 Hospitality</td>
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<tr>
<td>5500 Evaluation</td>
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</tr>
<tr>
<td>99 TOTAL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NB: Object of expenditure in the report should be exactly as required, in order to substantiate the "estimated disbursement" reflected in item 6. of the cash advance statement.

The above is simply an example with one code in each class. In the actual projects there may be more than one code in a class and some classes may even not be there.
### 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.:..........................................
Supporting organization.................................................................
Project title:.....................................................................................
Project commencing:............................... Project ending:......................................

<table>
<thead>
<tr>
<th>Object of expenditure in accordance with</th>
<th>Project budget</th>
<th>Expenditure Incurred</th>
<th>Unspent balance of budget allocation for year.............</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNEP budget codes</td>
<td>Allocation for Year</td>
<td>For the quarter</td>
<td>Comulative expenditures this Year</td>
</tr>
<tr>
<td></td>
<td>m/m Amount</td>
<td>m/m Amount</td>
<td>m/m Amount</td>
</tr>
<tr>
<td>------------------------------------------</td>
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<td>-----------</td>
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</tr>
<tr>
<td>(1)</td>
<td>(2)</td>
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<td>(4)</td>
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<td></td>
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</tr>
<tr>
<td>1101 National Coordinator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1201 National Circumstances (National circumstances reviewed and updated. Analysis and description of institutional arrangements for the preparation of national communication on a continuous basis)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1202 National GHG Inventories (Data collection up to the Year 2004 for the estimation of CO2 etc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1203 National GHG Inventories (Data quality assurance based on IPCC Good Practice Guidance and uncertainty management of National GHG Inventory)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1204 National GHG Inventories (Indepth review of previous GHG inventory covering all relevant sectors)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1205 National GHG Inventories (Development of project proposals for improvement of emission factors for the estimation of CO2 emissions and sinks from soils in land use change)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1206 National GHG Inventories (Establishment and maintenance of a database for CO2, CH4 etc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1207 National GHG Inventories (Projection of GHG emission trends up to 2020)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1208 National GHG Inventory (Preparation of the National Inventory Report)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1209 General Description of Steps (Assessment of climate change variability and climate change, including their trends)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step</td>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1210</td>
<td>General Description of Steps (Development of the detailed climate scenario, mapping of climate change indicators using new climate scenarios)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1211</td>
<td>General Description of Steps (Trend Analysis and construction of scenarios)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1212</td>
<td>General Description of Steps (Vulnerability assessment, including modeling)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1213</td>
<td>General Description of Steps (Climate Change impact assessment including modeling for all relevant socio-economic sectors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1214</td>
<td>General Description of Steps (Development of recommendations on zoning for agriculture needs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1215</td>
<td>General Description of Steps (Development of National strategy on Adaptation to Climate Change)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1216</td>
<td>General Description of Steps (Analysis of the activities 4.1 - 4.7 identification of gaps and unresolved problems)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1217</td>
<td>General Description of Steps (Projection of emission reduction up to 2020 based on improved GHG data)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1218</td>
<td>General Description of Steps (Assessment of mitigation measures in the energy and non-energy sectors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1219</td>
<td>General Description of Steps (Development of legal and economic instruments for mitigation measures)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1220</td>
<td>General Description of Steps (Development of measures to mitigate climate change)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1221</td>
<td>General Description of Steps (Develop a baseline GHG emission scenario for energy sector for 200 - 2030 by using a top-down model)</td>
<td></td>
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<tr>
<td>1222</td>
<td>General Description of Steps (Revise list of the GHG abatement measures/technology options already developed under TNA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1223</td>
<td>General Description of Steps (Identify barriers and policy needs for implementation of the prioritized measures)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1224</td>
<td>General Description of Steps (Prepare a draft National Strategy on Climate Change Mitigation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1225</td>
<td>General Description of Steps (Prepare draft chapter 4, circulate and incorporate comments to finalize chapter 4: Measures to Mitigate Climate Change)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1226</td>
<td>Other Relevant Information (Integrating climate change considerations into social, economic and environmental policies and actions)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1227 Other Relevant Information (Environmentally sound technologies)
1228 Other Relevant Information (Education, Training and Public Awareness)
1229 Other Relevant Information (Capacity-Building)
1230 Other Relevant Information (Information on "Information and Networking" compiled and synthesized)
1231 Other Relevant Information (Research, systematic observations and early warning systems)
1232 Constraints and Gaps, Related Financial, Technical and Capacity Needs
1233 Compilation, Production of Communication (Compilation of the Second National Communication)
1234 Finalization of the project report, preparation of the SNC summary

1301 Project Administrative Assistant
1302 Accountant (part time)
1382 Independent Audit (Paid by UNEP directly from project funds)

1382 Monitoring and Evaluation
1601 Staff Travel (International)
3201 National GHG Inventories (Participation in regional training workshop)
3202 National GHG Inventories (Organisation of technical capacity building training workshop on GPG)
3203 National GHG Inventories (Organize two workshops)
3204 General Description of Steps (Organization of two workshops) for the V&ATEG and stakeholders
3205 General Description of Steps (Capacity building training workshop on integrated assessment modeling/mitigation analysis)
3206 General Description of Steps (Organization of first workshops) for the MATEG and stakeholders
3207 General Description of Steps (Organize the second national workshop on "Climate Change Mitigation Assessment")
3208 Technical Assistance (Organisation of training workshop on application of integrated impact models (WEAP or others))
3209 Technical Assistance (Organisation of training workshop on assessment of sustainability and possible application of economic models in Senegal including cost-benefit analysis, with the assistance of an international consultant)
| 3301 National Circumstances (Organize a Project Inception workshop) |  |  |  |  |
| 3302 Finalisation of Communication (Organize the national workshop on discussion and presentation of the SNC) |  |  |  |  |
| 4101 Office Supplies |  |  |  |  |
| 4201 Equipment (2 PCs + laser printer) |  |  |  |  |
| 5201 Publication of the final version of the SNC |  |  |  |  |
| 5301 Communication Cost (internet, telephone, fax and courier service) |  |  |  |  |

| 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 Supporting Organization (if relevant):

1.4 Reporting Period (the three months covered by this report):

1.5 Staffing Details of 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>
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1.6 Sub-Contracts (if relevant):

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

Project Coordinator’s General Comments/Observations

NAME: ____________________________ DATE: __________________________
SIGNATURE: __________________________

UNEP Task Manager (or its Equivalent) Approval

NAME: ____________________________ DATE: __________________________
SIGNATURE: __________________________
### Appendix 1 to Annex 4

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>
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**List of Meeting Participants**

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<th>Name of the Participant</th>
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**Printed Material**

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<th>No.</th>
<th>Type (note 5)</th>
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<th>Author(s)/Editor(s)</th>
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**Technical Information / Public Information**

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**Technical Cooperation**

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<th>No.</th>
<th>Type (note 6)</th>
<th>Purpose</th>
<th>Venue</th>
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<th>For Grants and Fellowships</th>
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**Other Outputs/Services (e.g. Networking, Query-response, Participation in meetings etc.)**

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<th>No</th>
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10. **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>
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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 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
APPENDIX 1 OF ANNEX 6

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

Meetings (UNEP-convened meetings only)

<table>
<thead>
<tr>
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List of Meeting Participants

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Technical Information / Public Information

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Technical Cooperation
## Other Outputs/Services (e.g. Networking, Query-response, Participation in meetings etc.)

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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 7: Terms of Reference

National Project Coordinator

The NPC will be recruited by the DEEC 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 TEGs.

The candidate should be highly motivated, enthusiastic, and capable of working independently. He/she should have a strong scientific/technical and policy background. The NPC should have experience in preparation of the INC 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:

The NPC in consultation with the PAC will be responsible for the day-to-day management, coordination and supervision of the implementation of the project. The coordinator duties will include followings:

(i) Co-ordinate all project activities with heads of the TEGs, and a range of institutions and agencies, including UNEP, IPCC, UNFCCC secretariat, GEF, and national institutions to ensure smooth and appropriate execution of project activities.
(ii) Prepare a detailed project workplan and terms of reference for the project consultants.
(iii) 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.
(iv) Identify, interview and recruit national and international consultants to work for the project.
(v) Promote 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)”.
(vi) Prepare the periodic progress reports on project implementation and ensure that all national project outputs are sent to UNEP.
(vii) Manage the project expenditures according to the project budget.
(viii) Identify training needs of the contracted national consultants and other project stakeholders, and identify appropriate courses and trainings for national capacity building.
(ix) Organize national workshops and trainings according to the project workplan. Attend, whenever possible, the relevant regional and international workshops, trainings and conferences.
(x) Review all materials generated during the project.
(xi) Ensure the publication and dissemination of the reports identified as project outputs.
(xii) Coordinate negotiations in co-operation with Government and financing institutions in order to identify and mobilize sources for the follow-up activities.

Qualifications:

(i) An advanced degree (at least MSc. or Ph.D.) in environmental science or other related field.
(ii) Relevant experience in the field of climate change.
(iii) Familiarity with national communications, and with international negotiations and processes under the UNFCCC.
(iv) Substantial experience in government and in interdepartmental procedures.
(v) Familiarity with computers and word processing.
(vi) Good command in English.

Duty Station: The project office will be confirmed at the initiation workshop.

Duration: 3 years
**Administrative Assistant**

An Administrative Assistant (AA) will provide assistance to the NPC to facilitate smooth implementation of the project. The AA will be recruited by the AOS. His/her involvement in previous activities under climate change is a major precondition. The AA will work on a full-time basis and perform the following duties:

**Duties:**

(i) Assist the NPC in managing the project activities.
(ii) Assist the NPC in allocation and re-allocation of the project funds and in controlling the project expenditures.
(iii) Assist the NPC in preparing a work plan.
(iv) Assist the NPC in preparing the quarterly progress report of the project.
(v) 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.).
(vi) Arrange purchasing of office equipment for the project purposes on a competitive basis.
(vii) Maintain inventory of non-expendable equipment.
(viii) Provide substantial support to the project workshops and trainings. Attend, whenever possible, regional and international trainings relevant to climate change.
(ix) Set up and maintain the project filing system.
(x) Provide general administrative support to project activities.
(xi) Perform other project-related duties as requested by the NPC.
(xii) Ensure that there is proper accountability of project funds.
(xiii) Prepare the expenditure statements in line with the UNEP budget code.
(xiv) Prepares quarterly financial statement.

**Qualifications:**

(i) A university degree in economics or environmental management.
(ii) A minimum of 3 years of relevant experience in a field related to climate change.
(iii) Work experience with international organizations.
(iv) Knowledge of computers and word processing.
(v) He/she must have worked on a climate change related activities.

**Duty Station:** The project office will be confirmed at the initiation workshop.

**Duration:** 3 years

**Accountant**

An Accountant will be recruited to work on a part-time basis. The Accountant will work under the direct supervision of the NPC and in cooperation with AA. The responsibilities of the Accountant will be:

(i) Execute the work of book keeping.
(ii) Track payment/invoices/receipts and reconcile all expenditures of funds.
(iii) Ensure proper accountability of funds.
(iv) Prepare the expenditure statements in line with the UNEP budget code.
(v) Advise on the proper utilization of funds and sign on the accuracy of the expenditures along with the NPC.

**Qualifications**

(i) A university degree in accounting/economics/management.
(ii) A minimum of three years of working experience with international agencies.
(iii) Knowledge of computers and be able to work with Microsoft Excel and Microsoft Word.
(iv) Excellent English.

**Duty Station:** The project office will be confirmed at the initiation workshop.

**Duration:** According to the project workplan and terms of reference.
Technical Expert Groups (TEGs)

The team leaders who will head each TWG consist of full-time and par-time consultants from relevant sectors, including government agencies, academic institutions and NGOs. The TEGs will be answerable to the NPC. The NPC and the leaders of each TWG will form the project management team. The TEGs will develop the work plans 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 manage all technical assistance and recruitment of consultants for day-to-day project work.

The TEGs will have the following duties:

1. GHG Inventory TEG

   Duties:
   (i) Assist the NPC in preparation of workplan in part of the relevant activity.
   (ii) Advise on selection and application of appropriate inventory methodologies.
   (iii) Assist in data quality assistance and key source analysis.
   (iv) Recommend the ways of improvement of the national emission factors.
   (v) Contribute substantially to development of the National Inventory Report and identify the follow-up activities.
   (vi) Assist the NPC in arrangement of the national review and training workshops on improving quality of the national GHG inventory.
   (vii) Suggest on technical capacity building and participate in the subregional, regional and international training on GHG inventory.

2. Vulnerability and Adaptation Assessment TEG

   Duties:
   (i) Assist the NPC in preparation of workplan in part of the relevant activity.
   (ii) Advise on selection of appropriate methodologies to assess vulnerability and adaptation.
   (iii) Oversee the development of climatic scenarios and selection of relevant methodologies.
   (iv) Supervise an assessment of vulnerability and climate change impact.
   (v) Contribute substantially to development of the National Strategy on Adaptation to Climate Change and identify the follow-up activities.
   (vi) Help organize the national review and training workshops on vulnerability and adaptation measures.
   (vii) Suggest on capacity building and participate in the subregional, regional and international trainings on integrated assessment modeling.

3. Mitigation Analysis TEG

   Duties:
   (i) Assist the NPC in preparation of workplan of relevant activity.
   (ii) Assist the NPC in search and choice of appropriate training courses on applying macro-economic models.
   (iii) Advise on selection of macro-economic models for evaluating mitigation options and measures for GHG emission reduction.
   (iv) Overview and select measures to mitigate climate change and identify the follow-up activities.
   (v) Assist the NPC in arranging the national review and training workshops on climate change mitigation measures.
   (vi) Suggest on technical capacity building and participate in the subregional, regional and international trainings on mitigation measures analysis.

4. Environmentally Sound Technologies TEG

   Duties:
   (i) Assist the NPC in preparation of workplan in part of the relevant activity.
   (ii) Advise on selection of priority technological needs.
(iii) Analyze the cost-effectiveness of the technologies and the opportunities for their application.
(iv) Assess the existing endogenous technologies for further promotion within the context of national circumstances.
(v) Contribute substantially to establishment of database for ESTs, including both mitigation and adaptation technologies.
(vi) Identify the follow-up activities.
(vii) Assist in arranging the national review and awareness raising workshops on ESTs and participate in the subregional, regional and international trainings on ESTs.

5. Research and Systematic Observation TEG

Duties:
(i) Assist the NPC in preparation of workplan in part of the relevant activity.
(ii) Assess the existing system for early warning on extreme weather events and methods of seasonal forecasting.
(iii) Analyze the existing barriers for development of observation systems and research, and identify the follow-up activities.
(iv) Contribute substantially to development of the National Information Report on Research and Systematic Observation.
(v) Assist in arranging the national review and awareness raising workshops on research and systematic observation, and participate in the subregional, regional and international trainings on the matter.

6. Education, Training and Public Awareness TEG

Duties:
(i) Assist the NPC in preparation of workplan in part of the relevant activity.
(ii) Advise on development of outreach materials.
(iii) Recommend the ways of dissemination of these materials through mass media.
(iv) Provide training workshop on organizing outreach materials.
(v) Identify the follow-up activities.

Duty Station: The project office will be confirmed at the initiation workshop.

Duration: According to the project workplan and terms of reference.