



REPUBLIC OF THE GAMBIA

National Portfolio Formulation Document (NPF)

(GEF-5 Focal Area Strategies)

MAIN REPORT

**National Environment Agency
(NEA)**

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LIST OF ACRONYMS AND ABBREVIATIONS

ACDO	Agricultural Communication Division Officer
ADWAC	Agency for Development of Women and Children
AEWA	African Eurasian Water-bird Agreement
AFET	Association of Farmers Educators and Teachers
AMCEN	African Ministerial Conference on the Environment
ANRE/TAC	Agriculture, Natural Resources and Environment /Technical Advisory Committee
BCC	Banjul City Council
CAS	Country Assistance Strategy
CBOs	Community-Based Organizations
CCF	Chlorofluorocarbons
CFC	Chloro-Fluro Carbons
CFM	Community Forestry Management
CITES	Convention on International Trade of Endangered Species
CMS	Convention on Migratory Species
CONACILLS	
CRR	Central River Region
CSOs	Civil Society Organizations
DCD	Department of Community Development
DoA	Department of Agriculture
DoFis	Department of Fisheries
DPWM	Department of Parks and Wildlife Management
DWR	Department of Water Resources

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EEC	European Economic Community
EDF	European Development Fund
EQSB	Environmental Quality Standards Board
ERP	Economic Recovery Program
FAO	Food and Agriculture Organization
FFHC	Freedom From Hunger Campaign
FGD	Focus Group Discussion
GBA	Greater Banjul Area
GBoS	Gambia Bureau of Statistics
GCCI	Gambia Chamber of Commerce and Industry
GDP	Gross Domestic Product
GEAP	Gambia Environmental Action Plan
GEF	Global Environment Facility
GLF	Gambia Local Fund
GOTG	Government of The Gambia
GRTS-TV	Gambia Radio and Television – Television
GTA	Gambia Tourism Authority
IBRD	International Bank for Recurrent and Development
ICAM	Integrated Coastal and Marine Areas Management
IDA	International Development Assistance
IDB	Islamic Development Bank
IFAD	International Fund for Agricultural Development
IPCC	Inter-Governmental Panel on Climate Change
HCFC	Hydro Chloro-Fluro Carbons
KAC	Kerewan Area Council
KMC	Kanifing Municipal Council
LEAP	Local Environment Action Plan
LGR	Local Government Reform
LRR	Lower River Region
MACS	Mobile Air Conditioning System
MDGs	Millennium Development Goals
MEAs	Multi-Lateral Environmental Agreements
MMAP	Methodist Mission Agricultural Program
MoFEN	Ministry of Forestry and Environment
MSY	Maximum Sustainable Yield
NACOFAG	National Coordination of Farmer Associations- Gambia
NAM	National Assembly Member
NAPA	National Adaptation Plan of Action
NAP	National Action Plan
NARI	National Agricultural Research Institute
NAS	National Aids Secretariat
NATC	Njawara Agricultural Training Centre
NBR	North Bank Region
NBSAP	National Biodiversity Strategy Action Plan

NCC	National Climate Committee
NDMA	National Disaster Management Agency
NEA	National Environment Agency
NEMC	National environmental Management Council
NERICA	New Rice for Africa
NGO	Non Governmental Organization
NPFE	National Portfolio Formulation Exercise
NRM	Natural Resources Management
ODS	Ozone Depleting Substances
OMVG	Organisation pour la Mise en Valeur du Fleuve Gambie
PAU/OP	Policy Analysis Unit/Office of the President
POP	Persistent Organic Pollutants
PRSP	Poverty Reduction Strategy Paper
PSD	Programme for Sustainable Development
PURA	Public Utilities Regulatory Authority
R&D	Research and Development
SPACO	Strategy for Poverty Alleviation Co-ordinating Office
TA	Technical Assistance
TAC	Technical Advisory Committee
TANGO	The Association of Non-Governmental Organizations
UNCCD	United Nations Convention to Combat Desertification
UNCCF	United Nations Country Cooperation Framework
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UN	United Nation
UNEP	United Nations Environment Programme
WASDA	Wuli and Sandu Development Agency/Association
WCR	Western Coast Region
WHO	World Health Organization

SECTION ONE BACKGROUND INFORMATION

1.1 The GEF National Portfolio Formulation Exercise

1.1.1 Purpose

The main purpose of the GEF National Portfolio Formulation Exercise is to serve as priority setting for The Gambia and as a guide for GEF Agencies as they assist the country in the finalization and implementation of the programs and projects.

The main objectives are:

- 1) To strengthen country ownership over decisions on GEF resource programming.
- 2) To increase opportunities to align the programming of GEF resources with other relevant strategies and national planning processes and increase responsiveness to country priorities for generating global environmental benefits under the multilateral environmental conventions.
- 3) To identify projects and programmatic approaches that will use national allocations under the STAR in the three concerned focal areas, as well as other resources available under the GEF focal areas not subject to STAR allocations.
- 4) To bring together all relevant ministries and representatives of other key stakeholders (e.g. CSOs and the private sector) to provide input on decisions regarding GEF resource programming.
- 5) To build the capacity of GEF focal points to coordinate GEF policy with other ministries and to solicit input from other stakeholders.
- 6) To provide for a more predictable and transparent programming process at the national level, which will provide the GEF Secretariat, the GEF Agencies, and the GEF Council with a clearer understanding of The Gambia's prospective project pipeline during a replenishment period.
- 7) To make the pre-project identification form, PIF, portion of the GEF project cycle more efficient.
- 8) To enhance the mainstreaming of global environmental concerns into other national planning processes and strategies by raising awareness of global environmental issues and priorities among national decision-makers.

1.1.2 Scope

The main areas of the formulation exercise referred to as the terms of reference included the following (**Annex 1**): i) The Gambia's strategic priorities under each of the GEF Focal Areas; and ii) an indicative list of project concepts that could be developed to achieve the objectives of the focal areas.

To obtain data and information for the exercise and fulfil the requirements of the terms of reference, state and non-state actors (institutions) were informed about the exercise and their support was solicited for by the National Environment Agency (**Annex 2**).

1.1.3 Methodology

Data and information for this study were obtained by NEA staff and three consultants through extensive review of relevant literature and guided focus group discussion (FGD) held at the national and regional levels.

The relevant literature included government documents such as Policies, Mandates, Agreements, Conventions, Acts, Decrees, and Codes of Conduct and previous studies commissioned by government and/or development partners.

The state, pressure, impact and response (SPIR) approach recommended by UNEP for the preparation of the State of the Environment Report – The Gambia, 2010 was used as background information for the GEF-5 Focal Areas.

The guided focus group discussions were held at national and regional levels with stakeholders of state (public) and non-state (other) institutions during the period June 22 – August 19, 2011. The issues discussed centered on) : GEF Focal Areas; institutions' legal mandates and priority strategic areas of focus with regards biological diversity, climate change mitigation, and land degradation (desertification and deforestation).

A program-based budgeting system was used to identify the programs, projects and likely activities for implementation during the whole of the GEF-5 period.

The NPFE document was validated at a national workshop held at the Paradise Suites during the period August 17 – 19, 2001.

1.1.4 Limitations

The major limitations of the study are time and adequate funding for extensive consultations over a longer period. The fact that the exercise was conducted during end of second quarter of GEF-5 increased pressure on the timely completion of the exercise to avoid loss of time for implementation of the GEF-5 Focal Area Programs.

1.2 The Country Setting

1.2.1 Geographic Location

The Gambia lies 15° longitude at equal distances from the Equator and the Tropic of Cancer. It has an area of 11,300 km² and is bounded by Senegal to the North, South and East and by the Atlantic Ocean to the West. The Country is widest at its westerly end

towards the ocean about 48 km across and narrows to about half this width at its eastern tip, 480 km inland. The country is bisected by the River Gambia forming the North and South banks, with the former being less developed than the latter. Banjul, the administrative center and capital, is situated on an island at the estuary.

1.2.2 Demography

The population of The Gambia is 1.3 million with a population growth rate of 2.77 (Census, 2003). The percentage of population in the rural areas is 62.88 while that in the urban area is 37.12. The life expectancy for males is 56 years while that for females is 59 years. The infant mortality rate (per 1,000 live births) is 84 while maternal mortality rate (per 100,000 live births) is 730.

1.2.3 The Economy

The real growth in GDP (2005) is 6%, annual average growth rate is projected at 5% while the GDP distribution per main activity is: Agriculture 30%; Tourism 3.8%; Telecommunications 7.3%. The GDP per capita is US\$310 while the national poverty rate is 71%.

1.2.4 Human Development

The primary education completion rate (% age group) is 80%, the illiteracy rate (% age 15 and above) 64.5%, male illiteracy rate (% age 15 and above) 55.5%, while that of females (% age 15 and above) is 73.1%.

The unemployment rate (% of total) is 26%, and youth (ages 15 – 24). The number of women in rural development (total number) is 42,178.

1.2.5 Political and Administrative Structure

The Gambia is divided into seven regions: Two Municipalities – Banjul City Council (**BCC**) and Kanifing Municipal Council (**KMC**) and five provincial administration regions – West Coast Region (**WCR**), North Bank Region (**NBR**), Lower River Region (**LRR**), Central River Region (**CRR**), and Upper River Region (**URR**).

Politically, the relevant units are Local Government Areas (urban), District, Wards and Villages. The country has 40 districts and about 1,870 villages with an average of 13 people in a compound. The government has been implementing a decentralization policy aimed at devolving responsibility for administration especially natural resource management to the region, district and ward levels since 1990.

1.3 The National Development Paradigm Shifts

The national development paradigm shifts that the country has gone through over the years are discussed below in descending order beginning with where the GOTG wants to

lead the country's development, Vision 2020 The Gambia Incorporated and ending with the Economic Recovery Programme, 1985 (ERP, 1985).

1.3.1 Vision 2020 The Gambia Incorporated

The Government of The Gambia adopted the Vision 2020 The Gambia Incorporated in May 1996. The mission statement of Vision 2020 is:

To transform The Gambia into a financial centre, a tourist paradise, a trading, export-oriented agricultural and manufacturing nation, thriving on free market policies and a vibrant private sector, sustained by a well educated, trained, skilled, healthy, self-reliant, and enterprising population, and guaranteeing a well-balanced eco-system and a decent standard of living for one and all, under a system of government based on the consent of the citizenry.

The Vision 2020's important medium to long-term objectives of the agriculture and the natural resources sector are to:

- Increase ANR output of both domestic and export produce in order to ensure food security and generate earnings of foreign exchange to finance other aspects of the development process;
- Create employment and generate income for the majority of the rural population who are largely dependent on ANR;
- Diversify the ANR base to facilitate the production of a wider range of food and export produce in order to reduce the fluctuations and uncertainties associated with rural household incomes and export earnings;
- Reduce disparities between rural-urban incomes as well as between men and women, curb rural – urban drift and accelerate the pace of development of the rural sector
- Provide effective linkages between ANR and other sectors of the economy such that developments in the non-agriculture sectors, particularly manufacturing and tourism, are founded on a firm and diversified ANR base capable of progressively releasing both labour and financial services to other sectors of the economy;
- Create a sustainable and balanced mix between rain-fed and irrigated agriculture, thus, ensuring an optimal use of natural resources of surface and ground water, animal, aquaculture and crop production as well as between chemical and organic inputs and the use of agricultural by-products.

These objectives of the ANR are considered important due to the fact that the ANR sector is the dominant sector in the Gambian economy. The sector employs over 70% of the total workforce, contributing on average 22 % of the GDP. Despite these attributes, the sector continues to lag behind other sectors in productivity, and is characterized by an undiversified primary agricultural system, conditioned by a seemingly unbreakable cycle of erratic and inadequate input supplies, inappropriate technology, low output and productivity growth, low incomes and an acute inability to generate savings for

investment. The lack of progress in the development of large-scale commercial agriculture at a modern, economically viable scale is attributed to an unsatisfactory land tenure system.

1.3.2 The Poverty Reduction Strategy (PRSP) and the Millennium Development Goals (MDGs)

The Gambia's medium-term strategy is presented in the Poverty Reduction Strategy Paper (PRSP/SPA II). The second Strategy for Poverty Alleviation (SPA II) is a "home-grown" version of the PRSP, covering the period 2007 to 2011. It is based on five pillars:

- Improving the enabling policy environment to promote growth and poverty reduction in areas such as economic management, including macroeconomic stability, public finance management, public debt management, divestiture, and civil service reforms.
- The second pillar aims at enhancing the capacity and output of the productive sectors of the economy mainly agriculture, fisheries, industry, trade, tourism and infrastructure, with emphasis on productive capacities of the poor and vulnerable populations. The private sector investment particularly addresses constraints to investment in the production of goods and services as these relate to job creation.
- The third pillar aims at improving coverage of the basic social services and social protection needs of the poor and vulnerable. This pillar focuses on publicly provided social services, particularly health and education with special concern on access to these.
- Pillar 4 aims at enhancing governance systems and building the capacity of local communities and civil society organizations (CSOs) to play an active role in economic growth and poverty reduction. This pillar looks at the effective implementation of local governance and decentralization processes. Key issues in this regard are fiscal as well as political decentralization. This pillar is related to pillar 3 on delivery of social services. One added aspect is empowerment of local communities and their involvement in decision-making that affects their lives.
- This fifth pillar is concerned with mainstreaming crosscutting issues – gender, youths, population, HIV/AIDS, nutrition and environment – into the development process.

The PRSP sets out the poverty reduction strategy and implementation modalities for Vision 2020, which provides the national context for poverty eradication and seeks to transform The Gambia into a dynamic middle-income country.

Bilateral and multilateral development assistance to The Gambia is reflected in a number of agreements: the UN Country Cooperation Framework (CCF), the UN Development Assistance Framework (UNDAF), the World Bank Group Country Assistance Strategy (CAS I, II), EDF, DFID, etc, which have in addition targeted various sectorial programmes.

The PRSP makes explicit reference to the MDGs as the framework for poverty reduction in the long term. The most relevant MDGs to the agricultural and natural resources sector are:

MDG 1: Eradicate Extreme Poverty and Hunger

- The targets are to halve, between 1990 and 2015, the proportion of people whose income is less than a US\$1 a day; halve, between 1990 and 2015, the proportion of people who suffer from hunger.

MDG 7: Ensure Environmental Sustainability

- Integrate the principles of sustainable development into the country's policies and programmes and reverse the loss of environmental resources; halve, by 2015, the proportion of people without sustainable access to safe drinking water; have achieved by 2020 a significant improvement in the lives of at least 100 million slum dwellers.

MDG 8: Develop a Global Partnership for Development

- Develop further an open, rule-based, predictable, non-discriminatory trading and financial system (includes a commitment to good governance, development and poverty reduction – both nationally and internationally).
- Address the special needs of the least developed countries (includes tariff- and quota-free access for exports, enhanced programme of debt relief for and cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction).
- Address the special needs of landlocked countries and small island developing states (through the Programme of Action for Sustainable Development of Small Island Developing States and 22nd General Assembly provisions)
- Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term.
- In cooperation with developing countries, develop and implement strategies for decent and productive work for the youth.
- In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries.
- In cooperation with the private sector, make available the benefits of new technologies, especially information and communications technologies.

The Government of The Gambia has made substantial efforts to integrate the MDGs into the current planning process. Budget allocations, particularly from 2003, reflect a growing trend in increasing the percentage of spending for the social sectors. The Public Expenditure Reviews (PERs) of some of these sectors also devote sufficient attention to the MDGs as part of the HIPC triggers.

1.3.3 Programme for Sustainable Development (PSD)

In 1990, the Programme for Sustainable Development was launched in order to deepen the gains and address the socio-economic effects of the economic recovery programme.

In 1998, the government adopted a long-term strategy for accelerated and sustainable development, Vision 2020 The Gambia Incorporated, in order to transform the country into a middle-income nation.

1.3.4 The Economic Recovery Programme (ERP)

Since the mid-1980s, The Gambia has been implementing economic policies that emphasize achieving macroeconomic stability, liberalization and private sector development. The government implemented an ambitious Economic Recovery Programme in 1985 with assistance from the World Bank and IMF, and other multilateral and bilateral development partners with the objectives of:

- reducing government expenditure
- liberalizing trade
- deregulating domestic prices and eliminating subsidies.

These measures also led to a significant retrenchment of civil servants, and a zero growth moratorium was placed on the government machinery-staffing situation. With the later high attrition rate of the civil service sector, this zero growth on the civil service had a significant adverse effect on government's absorptive capacity and the attendant loss of Gambian civil servants with institutional memories. Coupled with the inadequate financial resources, this led to the subsequently bigger challenge to government to adequately address the issues of poverty reduction and the broader development goals.

1.4 The Public Sector

The Government of The Gambia's order of business is conducted through elaborate government machinery consisting of the Executive, the Judiciary and the Legislature.

The Ministries are each headed by a Permanent Secretary, who works under the political leadership of a Minister. The Ministers are appointed by the President to form the Cabinet or Executive. The Ministries are grouped under four main areas:

- Law and Order Justice, Defence, Interior and NGO Affairs
- Economic Ministries Finance; Trade, Employment and Regional Integration; Agriculture; Fisheries, Water Resources and National Assembly Matters; Forestry and the Environment, Energy, Petroleum and Mineral Resources
- Social Service Ministries Health and Social Welfare; Basic and Secondary Education; Higher Education, Research, Science and Technology; Youth and Sports; Local Government and Lands, Women's Affairs
- Other Ministries Foreign Affairs, International Cooperation and Gambians Abroad; Works, Construction and Infrastructure; Information and Communication Infrastructure; Tourism and Culture.

These ministries perform and deliver all the government functions and services either directly from the capital, Banjul, where their headquarters are located or from their regional branches.

The urban and rural administration of the country is under the jurisdiction of the Ministry of Local Government and Lands, which supervises: Governors at the regional headquarters; head chiefs (seyfolu) at the district headquarters, and village heads (alkalolu) at the village level.

1.5 Provinces Act of 1935

The Gambia, under the Provinces Act of 1935, was divided into five Provinces, now known as Administrative Regions, and the Greater Banjul Area. The five Regions are:

- West Coast Region (headquarters – Brikama)
- Lower River Region (headquarters – Mansakonko)
- North Bank Region (headquarters – Kerewan)
- Central River Region (headquarters – Janjangbureh)
- Upper River Region (headquarters – Basse)

Each region is further divided into districts making a total of 40 districts countrywide. The President of the Republic directly appoints the seyfolu and alkalolu, who head districts and villages respectively. The alkalolu and the seyfolu form the district tribunals.

There are three types of authorities within the local government system: City Councils: Banjul City Council (1); Urban- District Councils: Kanifing Municipal Council (1); and Area Councils (6).

A Council is composed of a majority of elected councilors, traditional and nominated members. The Regional Governor is the Chairman of the Council. The administration of the council is the responsibility of the Town Clerk for Banjul City and Kanifing Municipal Councils and a Chief Executive Officer for the other councils.

SECTION TWO

THE NATIONAL COORDINATION AND CONSULTATION PROCESS

2. National Coordination Framework for Management of the Environment and Natural Resources: The Gambia Environmental Action Plan (GEAP)

Following nearly two decades of severe environmental degradation, in 1993 the Government of The Gambia undertook the implementation of a programme of environmental and natural resource management entitled Gambia Environmental Action Plan (GEAP). At the core of GEAP was the recognition that for economic development and growth to be sustainable the environment and natural resources must be properly managed.

2.1 Main Purpose of GEAP

The main purpose of the GEAP is to assist the government and citizens of The Gambia to: Improve economic performance and quality of human life in a sustainable way, and, to restore, maintain and enhance ecological processes, natural resources and cultural and natural heritage. The GEAP policy objectives provide for a broad approach to environmental management in accordance with existing environmental legislation and international conventions.

2.2 Building of Constituency and Setting up of Technical Working Groups

The building of a constituency is one of the best ways of attaining sustainability in The Gambia for environmental management. There is now a participatory functional institutional framework for coordination and implementation of the GEAP, comprising principally the national Environment Management Council NEMC, and the National Environment Agency, NEA. The NEMC is the main policy-making body for environmental management. This council is chaired by the President of the Republic, with the Ministers responsible for the following Ministries as members:

- (i) Natural Resource;
- (ii) Agriculture;
- (iii) Health and Social Welfare;
- (iv) Finance and Economic Affairs;
- (v) Trade, Employment, Regional Integration, and
- (vi) Local Government and Lands.

The Executive Director of the NEA serves as Secretary to the Council. In addition to the above, the President may co-opt any person into the Council as a member.

The NEA carries out the task of coordinating multi- and cross-sectorial environmental and natural resource management issues through the framework of networks and technical working groups. The working group approach has helped to satisfy both inter- and intra-institutional working relationships. These technical working groups are organized along programmatic lines with a broad membership base drawn from institutions with complementary mandates for environmental and natural resource management. Each working group acts as a clearinghouse for the respective programme, ensuring coordination among the member organizations including Ministries, NGOs, and the private sector in the area of environment and natural resources management.

The approach has created a permanent system for continuous consultation and dialogue among the stakeholders in order to ensure that programmes are complementary and to maintain maximum impact from often limited resources. The working group concept has been adopted by planning authorities at the regional level, where the authorities have established sub-committees on the environment and natural resources. This is a major achievement in environmental management, as the mechanism will ensure future continuation of programmes.

There are nine technical working groups, membership includes both state and non-state actors, and terms of reference to guide their operation have been updated (**Annex 3**). These 9 technical working groups are:

- (i) Agriculture and Natural Resource Management;
- (ii) Environmental Education and Communication
- (iii) Environmental Information Systems
- (iv) Environmental Impact Assessment
- (v) Environmental Legislation
- (vi) Environmental Quality Monitoring and Enforcement
- (vii) Coastal and Marine Environment
- (viii) Pesticides Regulation and Control Board
- (ix) The Ozone Programme

With support from the Capacity 21 project, the GEAP was decentralized. Five Local Environmental Action Plans (LEAPs) have been developed in five administrative regions in the country. In each region there is now Agriculture and Natural Resources and the Environment (ANR&E) Subcommittee, which, in collaboration with the Regional Coordinating Committees, looks into the implementation of environment and natural resources-related activities at the regional level. This arrangement tries to encourage greater synergy among the three conventions of climate change, biodiversity and desertification, which are all closely linked. In order to ensure that all grassroots sectors of the economy are represented, a “bottom-up” approach has been adopted in the identification of environmental problems. The country has now been divided into sixteen agro-ecological zones. Capacity in environmental and natural resources management has been strengthened through training programmes for staff members of the NEA, government line departments, NGOs and CBOs. The ANR Working Group has made a significant impact in information sharing and promoting harmonization among NRM sector projects.

2.3 Consultative Process for GEF-5 National Portfolio Formulation Exercise (GEF-5 NPFE)

The GEF-5 NPFE was conducted at the regional and sectorial levels and the draft document was validated at the national level.

2.3.1 Regional Level Consultations

Focus Group Discussions (FGD) were held at all the five regions of the country. A total of sixty-nine (61) state twenty-one (21) non-state institutions and One hundred and twenty-three (123) participants were involved in the exercise.

2.3.2 Sector Level Consultations

A total of seven (7) state institutions were consulted and a total of twenty-two (22) officers participated in the discussions.

2.3.3 Validation of GEF-5 National Portfolio Formulation Document

The validation was held at the Paradise Suites during the period August 17 – 19, 2011 and a total of ninety-seven (97) participants took part in the exercise.

SECTION THREE

THE COUNTRY'S GLOBAL ENVIRONMENTAL CHALLENGES IN THE DIFFERENT SECTORS

3.1 Climate Change

The Fourth Assessment Report of the IPCC concludes that climate change due to human activities is unequivocal and that global greenhouse gas (GHG) emissions will continue to grow over the next few decades with current climate change policies and development practices. It is widely recognized that the overall costs and risks of climate change will far exceed the cost of action to mitigate climate change. Emissions of greenhouse gases covered by the United Nations Framework Convention on Climate Change (UNFCCC) have increased in most countries worldwide over recent decades. Measures to address greenhouse gas emission issues transcend the global issues of energy security, economic prosperity and environmental protection. Economic development needs, resource endowments, and mitigation capacities differ across regions. Consequently, mitigation solutions need to be differentiated to reflect different socio-economic conditions.

3.1.1 State

In The Gambia, there has been decreasing rainfall and increasing temperatures from the mid-forties to date (**Figure 1**). The average temperatures of the Gambia range from 18° to 30 °C during the dry season and 23 ° to 33 °C during the wet season. The moisture quality in the atmosphere, which is indicated as relative humidity (RH) is about 68% along the coastal area and 41% inland during the dry season and generally above 70% during the wet season throughout the country. The annual rainfall ranges from 850mm to 1200mm.

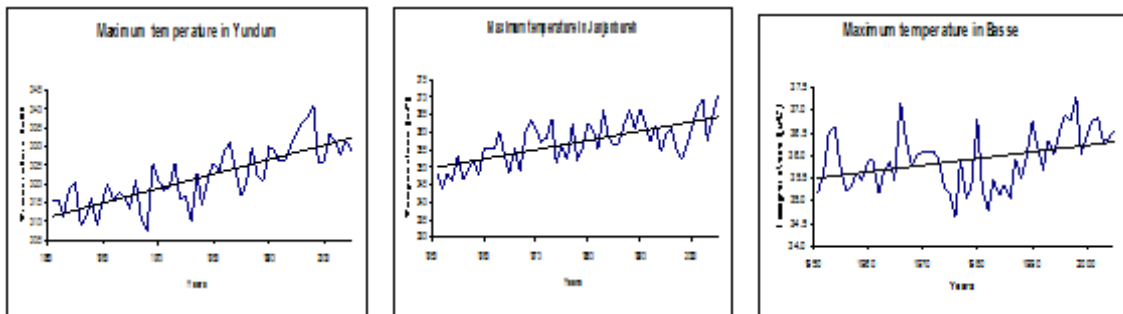


Figure 1: Trend of maximum temperature in western (Yundum), central (Janjangbureh) and eastern (Basse) Gambia (Source: Climate Section, Department of Water Resources, 2007)

In the dry season, mainly north-easterly winds dominate the flow, resulting in general cloudless skies and presence of dust particles in the air. This wind flow pattern is at times deformed due to projections of extra-tropical weather systems across the Mediterranean into north west Africa, which gives rise to unseasonal rainfall. During the wet season, south westerly monsoon winds combined with heat on the continent as a result of the northward movement of the wind give rise to the formation of thundery activities, usually

accompanied by strong winds, heavy downpours of rain and severe lightning flashes (Figure 2).



Figure 2: Average Wind Flow Pattern

However, in the Gambia the rainfall amount has been decreasing progressively from the mid-forties corresponding to approximately 30% in deficit (Figures 3a and 3b) with reductions in the length of the rainy season and increases in surface temperature making the atmosphere become dry.

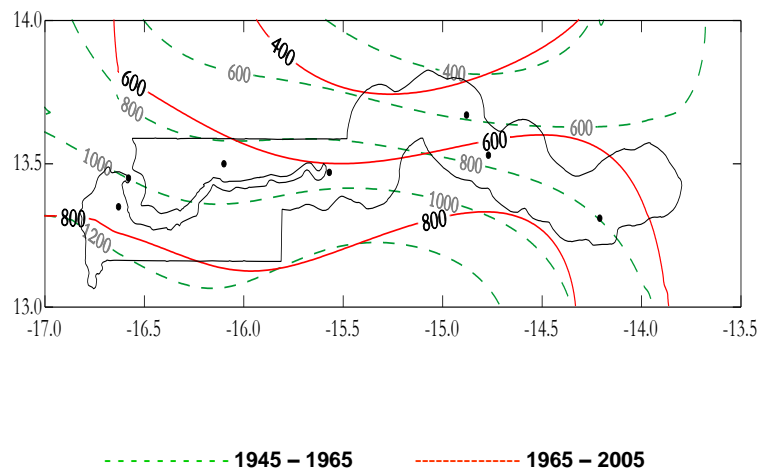


Figure 3a: Observed Rainfall Trend
(Source: Climate Section, Department of Water Resources, 2007)

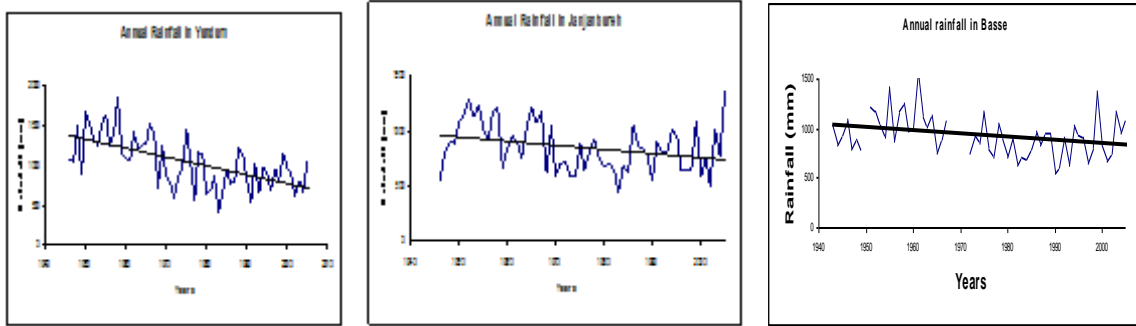


Figure 3b: Trend of Annual Rainfall in Western (Yundum), Central (Janjangbureh) and Eastern (Basse) Gambia (Source: Climate Section, Department of Water Resources, 2007)

Although The Gambia is a relatively small polluter in global terms, its growing population within the urban settlement with a potential increase of pollution is creating new challenges for the urban settlement and the environment. The patterns of motorization resemble those of the industrialised countries. Since the 1960s, the number of motor vehicles in The Gambia has been growing faster (**Box 1**).

Box 1: Total number of Vehicles Plying Routes in Banjul (1993)

The field survey estimate was 5232

*** Categories of vehicles**

Light Duty Gasoline Passenger Vehicles (LDGPV) = 2532

Light Duty Gasoline Trucks (LDGT) = 730

Heavy Duty Gasoline Vehicles (HDGV) = 161

Light Duty Diesel Passenger Vehicles (LDDPV) = 226

Light Duty Diesel Trucks (LDDT) = 1038

Heavy Duty Diesel Trucks (HDDT) = 153

Ship/Boats and motorized canoes = 107

Motorcycles = 200

Aircrafts = 3

Non-road vehicles (farm vehicles, forklifts, etc.) = 30

*** Average Amount of fuel consumed**

This was estimated as 27.5 litres/day (192.5 litres / week)

*** Average Distance covered**

The estimate was 117 km per day (820 km per week)

*** Average Age of vehicle**

Average age of vehicles was estimated as 10 years, representing age of operation in the Gambia plus age of operation in Europe since most vehicles in the Gambia are imported second-hand.

Motor vehicles are recognised as the major contributor to urban air pollution; their emissions of suspended particulate matter such as carbon monoxide, nitrogen oxide and unburned hydrocarbon are on the increase.

The 2003 census established a population growth rate of 2.7 percent for the whole of The Gambia and a growth rate of 8 percent for the urban area. The urban population constitutes 43 percent of the total national population. The high rate of population growth in the urban areas is attributed to rural-urban migration and influx of people from the sub-region. All major regional growth centres Kerewan, Janjangbureh, Basse, Mansakonko and Brikama have recently developed patterns of motorization that resemble those of the industrialised countries even though The Gambia is not an industrialized country. The lack of capacity to manage waste remains a serious problem, especially those of hazardous nature such as Persistent Organic Pollutants (POPs), Dioxins and Furans and Chlorofluorocarbon (CFCs) that are unintentionally released from stationary sources.

In November 1998 ambient air quality monitoring started in The Gambia for pollutants for a period of two years (**Table 1**). The parameter being monitored was nitrogen dioxide (NO₂). However, this programme was affected by the lack of capacity and funding. At the time, the results gathered on nitrogen dioxide indicated that the levels obtained were within the provisional guidelines although peak values were noted around Serrekunda, which is one of the largest growth centres within a municipality of 400,000 inhabitants.

The Gambia’s refrigeration sector is very small as compared to other developing countries. However, the country registered marked increase in this sector over the last few years, due mainly to the establishment of fish processing and handling plants funded by Government and the private sector. Also, other economic activities such as the booming hotel industry, expansion of breweries and increase in both super markets and commercial agricultural farms are active in the consumption of CFCs (**Figure 4**).

Table 1: CFCs Consumption (in ODP tonnes) from 1998 to 2006

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	Base line
CFC Consumption In Tonnes	10.9	6.9	6.1	5.810	4.660	5.100	5.236	.526	1.064	23.8

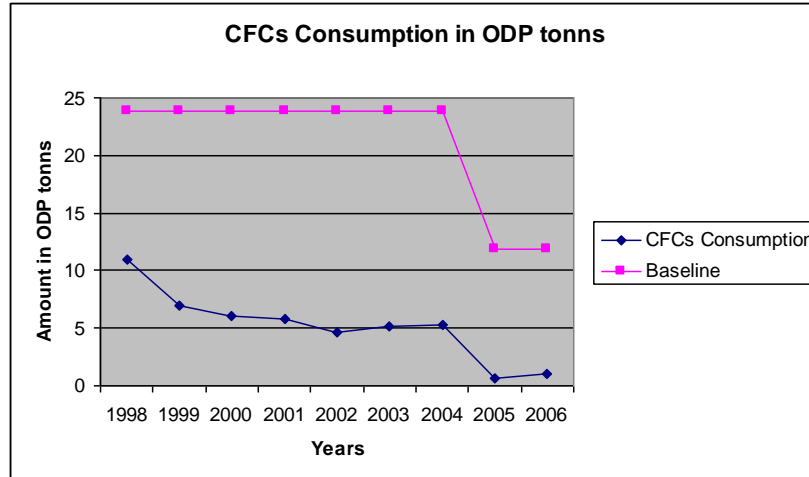


Figure 4 CFCs Consumption in ODP Tonnes from 1998 to 2006
 (Sources: Data reported to UNEP by NOO/NEA in 2006)

The Gambia’s refrigeration system has been categorized into three broad groups (**Table 2**). These categories are:

- Commercial & Industrial Refrigeration and Air Conditioning,
- Domestic Refrigeration and Air Conditioning, and
- Mobile Air Conditioning.

The Commercial and Industrial System in the Gambia include, fish processing plants, cold rooms, central air cold, foam processing and blast freezers. Earlier trends in use of ODS in their systems by some industrial setup have changed to ozone friendly refrigerant particularly to the Foam Factory which was using 8 tonnes of R11 before 1998. This was done through retrofitting of units at the foam factory and the others change their units to ODS free systems.

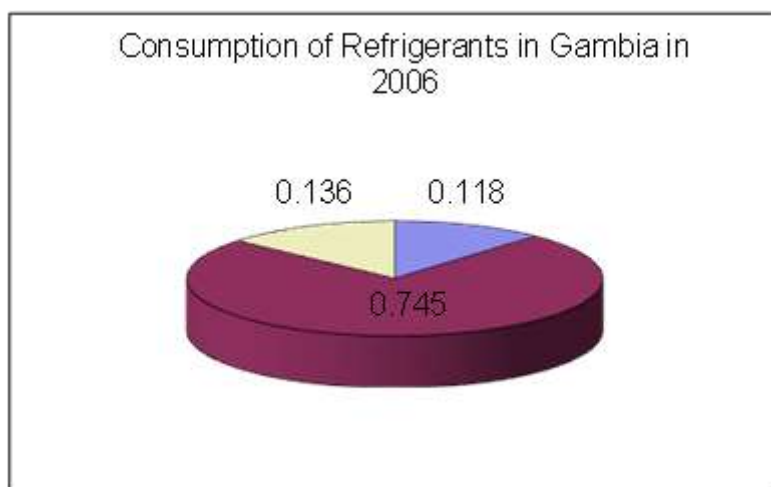
The CFCs consumption in the Gambia is mainly by the Domestic System where Ozone Depleting refrigerant are being used in servicing small refrigeration units across the country. The gradual decrease in the use of CFCs is as a result of countrywide training of technicians.

The Mobile System includes the refrigerated vehicles; these in most cases are containers like trucks, cars and buses that are equipped with air conditioning unit. In this system, second hand vehicles fitted with ODS gases are the principal sources of emission but with the introduction of the ODS regulation; importation of such vehicles has declined.

Table 2: Utilization of Refrigerant by Sector in Metric Tonnes

Section	Refrigerant	2006	% of R12 Consumption in 2006

Comm.& Industrial Refrigeration and air conditioning	CFC 12	0.118	12% (CFCs)
	R 502	0.065	
	HCFC 22	0.925	
	HFC 134a	0.333	
	NH3 and Others	2.955	
	Subtotal	4.396	
Domestic Refrigeration and Air Conditioning	CFC 12	0.745	75% (CFCs)
	HCFC 22	0.250	
	HFC 134a	0.839	
	Others	0.061	
	Subtotal	2.031	
Mobile Air Conditioning	CFC 12	0.136	13% (CFCs)
	HCF 134a	0.057	
	Subtotal	0.193	



With increasing economic activities such as expansion of enterprises refrigeration equipment is vital in their manufacturing processes for cold storage etc. This has brought about a general increase in the consumption of all classes of refrigerants, including CFCs, as the equipment imported is second-hand materials (**Figure 5**).

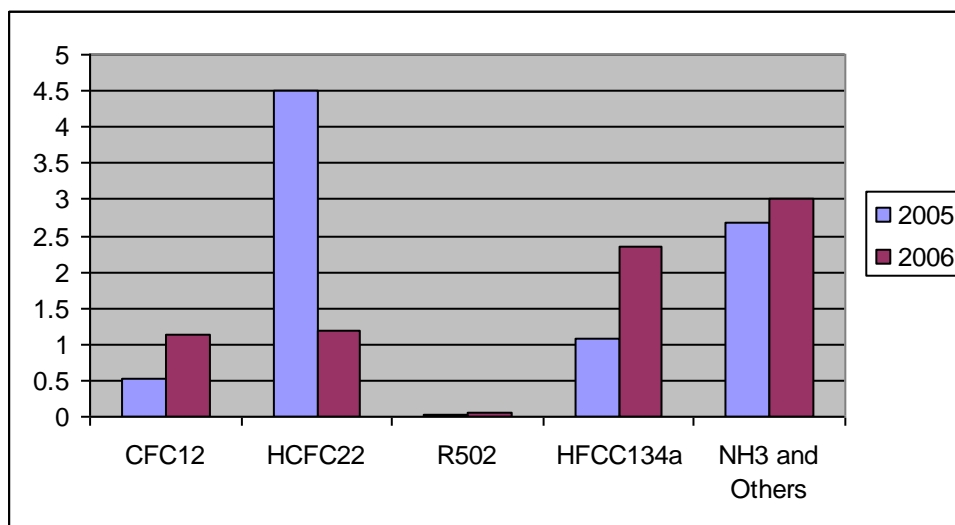


Figure 5: Use of Refrigerant in 2005 and 2006
Source: NOU/ NEA ODS data report 2006

Also, most refrigeration technicians in the country lack the basic tools and equipment required to prevent leakages while charging refrigeration systems in plants. This is further aggravated by the fact that many of these technicians operating in the country had no formal training in refrigeration and most of them are illiterate. Furthermore, customs officials have not had any prior knowledge or the skills to monitor and control importation of controlled Ozone Depleting Substances, especially at the various entry points. In this regard ODSs were imported into the country without much restriction prior to the implementation of the Ozone Programme.

3.1.2 Pressure

Previous uncertainties on the role of greenhouse gases on the observed changes in the climate system have now been verified, IPCC (2007a) explicitly states that “*most of the observed increase in global average temperatures since the mid-20th century is very likely¹ due to the observed increase in anthropogenic greenhouse gas concentrations*”.

The high rate of population growth in the urban areas is attributed to rural-urban migration and influx of people from the sub-region such as Cassamace, Liberia and Sierra Leone as a result of conflicts.

Although the NO₂ and PM₁₀ concentrations measured, are all lying within the provisional air quality standards adopted for The Gambia, there are clear indications of the potential for localised build up of these pollutants in densely populated areas of slow moving traffic and/or aggressive driving such as in Serrekunda.

¹ Assessed likelihood greater than 90%

The Gambia neither produces nor exports ODSs. The Country imports all of CFC-11, CFC-12, CFC-115 and HCFC -22 for servicing refrigeration and air conditioning equipment and manufacturing of foam. The CFC-115 is imported as part of a refrigerant mixture called R-502. Small amounts (less than 10 litres) of methyl chloroform were stored in selected school laboratories. The only data on methyl bromide import was recorded in 1994.

The use of controlled cleaning solvents is insignificant. Also, imports of halons have been small with the last import in 1991. The principal source country of all ODS imported into the Gambia is the United Kingdom. However, this has been gradually replaced by the emerging Asian markets particularly China. The Gambia consumed 30.5 tonnes of ODS in 1994, which gives a per capita consumption of 0.030 kg (ODS CP, 1997).

3.1.3 Impact

Warming from human activities and rising sea levels would continue for centuries due to the time lag associated with climate processes and feedbacks, even if greenhouse gas concentrations were to be stabilised (IPCC, 2007a). This means that the adverse impacts of climate change are expected to persist for generations to come.

In The Gambia, climate hazards include torrential rainfall, storms such as wind, thunder and dust, cold spells, heat waves, intra-seasonal drought and unseasonal rains. Some of these hazards are projected to increase in frequency and intensity, and become more widespread (IPCC, 2007b).

Climate change constitutes one of the greatest burdens to national development efforts, poverty alleviation, achievement of the Millennium Development Goals (MDGs) because the productive base of the economy thrives on climate-sensitive activities such as crop production, livestock rearing, fisheries, energy, water resources, etc. However, little or no research has been undertaken in The Gambia on the linkages between climate and biophysical processes. A primary cause for the above situation is the absence of long-term datasets at the appropriate geographical scale in the various socioeconomic sectors. Hence the impacts of climate change presented below are obtained from model simulations of projected climate scenarios and their expected impacts on the socioeconomic sectors in The Gambia.

In **agriculture**, changes in rainfall and temperature are likely to constrain productivity of some crops. Model results show reductions in grain weight for most cereals compared to the baseline scenario: maize -28 to -40%, late millet -29 to 46%, early millet -3 to 30% (FNC, 2003). Furthermore inter-annual variability is expected to increase if compensatory management strategies are not put in place.

Given the current food insecurity in the country, further stress from climate change on the food production base needs attention. Furthermore the dependence on food imports is likely to be less cost-effective as the competition between the cultivation of food crops and raw materials for renewable energy intensifies around the world.

Sea-level rise is the greatest threat to the **coastal zone** due to its low-lying nature and the important infrastructural development. Furthermore the bisecting of the country by the River Gambia with a strong bi-directional flow coupled with significant (up to 30 per cent of total land area at or below 10 metres above mean sea level, and 10 to 20 percent seasonally or diurnally flooded) levels of low-lying areas, the threat from sea level rise goes beyond the coastal zone (**Table 3**). Mangrove ecosystems are also vulnerable to the changes in rainfall patterns, sea level rise and global warming.

Table 3: Area at or below Sea Level for different SLR Scenarios within Local Government Areas across the Country.

Local Government Area	Total Area (km ²)	SLR = 0cm	SLR = 50cm	SLR = 100cm
Banjul	11.0	5.7	6.5	7.0
Kanifing	80.0	34.2	35.0	36.0
Brikama	1763.0	184.0	219.0	240.0
Mansakonko	1561.0	93.0	154.0	197.0
Kerewan	2200.0	254.0	326.0	385.0
Kuntaur	1495.0	41.0	55.0	71.0
Janjangbureh	1466.0	51.0	86.0	124.0
Basse	2046.0	9.0	10.0	10.0

Source: Gambia National Adaptation Programme of Action on Climate Change, 2007

In the **energy** sector, fuel wood obtained from biomass represents over 80% of the total primary needs of the country (NAPA, 2007). A more erratic rainfall pattern coupled with increasing temperature are expected to reduce the potential for biomass energy production as well as for hydroelectric power generation.

Fisheries resources are expected to enjoy an initial boost in productivity but which will decline significantly with time. Fish species most likely to be affected include the high value fish species (FNC, 2003).

Such impacts may occur in the estuarine zone of the River Gambia, sea level rise may initially favour the mobilization and export of nutrients from wetland sediments (Helmond et al. 1984), but the same process could equally release pollutants into the aquatic systems. Most significantly (Darboe and Bojang, 2005) articulate national apprehensions about possible spawning and recruitment failures associated with loss of estuarine mangroves. Crucially, primary productivity is linked to the fate of mangroves (*Rhizophora spp.*).

In broad strategic terms, lower productivity means lowering of maximum sustainable yield thresholds (Cham et al. 2001).

Forest regeneration rates, which are in several ways similar to crops, are expected to decline under combined effects of rising temperature (increased evapotranspiration) and erratic rainfall. Though the increased atmospheric content of CO₂ would provide some benefits to forest plants, the reduced water availability would undermine this. Also dry conditions combined with high temperatures are favourable to forest fire hazards. In the freshwater parts of the estuary, lowland mangroves are likely to be affected by flooding and inadequate sediment supply.

Overall effects of climate change depend on their timing and synergy. Reduced forest productivity cuts down the amount of flammable material, thereby suppressing fire intensity. However, low productivity increases susceptibility in insect attacks (Sukaroljo, 1994).

Effects of climate change on the **health** sector include stress and health complications due to thermal extremes. In impoverished settlements, coping mechanisms through outdoor cooling may cause further exposure to malaria and other vector-borne diseases. Reduced food production may potentially lead to malnutrition and consequent disorders, particularly for child growth and development. Increased flooding events put more people at risk of injury and drowning, exposure to schistosomiasis as well as exposure to biologically active pollutants that may be present especially in stagnant flood waters (NAPA, 2007).

In the **water resources** sector, expected changes in temperature and rainfall will certainly alter relative magnitude of hydrological cycle components. Regimes and sizes of small surface water bodies would be hardest hit. In the medium to long-term, regulated flow in the River Gambia is expected to counteract natural variability.

The combination of sea level rise, global warming and changes in the rainfall patterns, could impact freshwater resources qualitatively and quantitatively. Surface evaporation is expected to increase, whilst ground water recharge is expected to take the reverse trend. Both phenomena, enhance advective salt transport in the River Gambia (Verkerk and van Rens, 2005; Njie, 2002; Savenije, 1988), which will place additional constraints on management of upstream fresh water reservoir.

However, the biggest threat of saline intrusion into the River Gambia and coastal aquifers comes from projected sea level rise (Njie, 2002). Further surface water quality degradation is linked to the export of nutrients from inundated areas (Hemond *et al.*, 1984), and increase biogeochemical activity in relatively warmer waters. In this connection, altered frequency of extreme events may lead to more frequent water quality problems.

3.1.4 Response

As a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), The Gambia participates fully in the activities of the Convention. The Gambia submitted her First National Communication to the Conference of Parties to UNFCCC in December 2003. The overall aim of the Framework Convention is to prevent dangerous human interference with the climate system.

The Gambia has also ratified the Kyoto Protocol of UNFCCC on 1 June 2001. The Protocol sets mandatory targets on greenhouse gas emissions for the world's leading economies, and among other things seeks to mitigate emissions whilst favouring a sustainable development path. Local institutions mainly in government have in the recent past attempted to take part in the Clean Development Mechanism of the Kyoto Protocol but have not been successful, due mainly to procedural lapses. Meanwhile with recent progress towards the establishment of a Designated National Authority, the country can expect to join other countries around the globe in the trade in Carbon Emissions Reductions that mitigate climate change.

As mentioned earlier, The Gambia is a net sink of greenhouse gases yet one of the most vulnerable to the impacts of climate change. The NAPA has highlighted the need for interventions in the various socio-economic sectors of the country in order to reduce the negative impacts of climate change. Funding is currently being sought to implement some of the identified interventions. Until funding is made available by the international community to enable the implementation of hard projects, the current situation is that of soft responses.

A major achievement of the GEAP implementation process has been the development of Environmental Quality Strategy and guidelines, which by and large aim to safeguard the health of the population as well as sustainability of environmental quality.

In 2001, The Gambia joined the global partnership for clean fuel and vehicle (PCFC) initiative. Since the 22nd of July 2006 a total ban on importation and selling of leaded petrol in The Gambia has been effected. The National Environment Agency in close collaboration with UNEP is working towards reducing sulphur levels in diesel fuel to 50ppm and below.

In this pursuit, many other agreements have been adopted at the global and regional levels to specifically address aspects of environmental management. Also, on indoor pollution primarily from dependence on biomass fuel and poor waste management, The Government of The Gambia has put in place the Antilittering Law and a national programme called Operation Clean The Nation.

A number of measures have been adopted to mitigate air pollution problems, particularly those caused by the transport sector and improper waste management due to indiscriminate waste burning and littering as follows:

- A total ban on the importation and selling of leaded petrol in The Gambia (effective 22nd July 2006);
- Establish the use of lower sulphur fuels especially diesel with 500ppm as an intermediate step and 50ppm in the long term by January 2008;
- Introduction of nationwide cleaning process call Operation Clean the Nation;
- Introduction of the Anti-littering Regulation;
- Enforcement of National and International Environmental Quality Standards Regulations as mandatory on the Gambia being a signatory/party to the establishment of the environmental quality standards board;
- Enforcement of the National Environment Management Act of 1994 as a strong regulatory tool for pollution control of activities of both public and private sector;
- Strengthen the implementation of ratified conventions such as Montreal, Bamako, POPs, Lomie and participated in African Ministerial Conference on the Environment (AMCEN). The NEA also collaborates with United Nations Environment programme (UNEP) on Clean Production (CP) and other environmentally related programmes e.g. UNEP Chemical and all those integrated preventive environmental strategies so as to increase efficiency and reduce risk on human and the environment.

Considering hazards related to improper management of Clinical Waste, the World Health Organisation (WHO) has built one incinerator in each of the following administrative regions via; Western, Lower River, North Bank; Central River and Upper River, managed respectively by Regional Team Officers (**Photo 1**). However, these incinerators are found to be too small for the amount and type of waste generated.



**Photo 1 : DemonFort mode 8:
Source : guide de construction version 1 (a Out 2002 ICP /PEV
OMS)**

In the bid to ensure effective surveillance and strengthen of the enforcement of regulations on air pollution by the transport sector, new regulations will require to be incorporated under the Motor Traffic Act to enable the police force to issue improvement notices relating to air pollution by vehicles. Such proposed new regulations will therefore need the collaboration between the police force and the NEA for the latter to fulfil its mandate to monitor and uphold environmental quality with the guidelines of the proposal in **Box 2**.

Box 2: Proposal for Further Action					
	Action	Organisation(s)	Responsibility	Target Date	Actual Date
Air Quality	Review air quality standard for PM10	EQSB	POEQ	2010	-
	Review all air quality standards	EQSB	POEQ	2010	-
	Review proposal for emissions inventory	NCCC NEA	CCPC	2010	-
	Review need to monitor additional air quality parameters	EQSB NEA	POEQ	2010	-
Enforcement	Review fiscal and economic incentives to industry for good environmental practice	NEMC NEA MoFEA	NEA Management	2010	Discussion with the MoFEA initiated

Developing countries (article 5 Parties) including The Gambia have agreed to freeze most CFC consumption as of July 1999 based on 1995-97 averages, to reduce this consumption by 50% by 1 January 2005 and to fully eliminate these CFCs by 1 January 2010. Other control measures apply to other ODS such as Halons, Carbon tetrachloride and methyl chloroform. For methyl bromide used primarily as a fumigant, industrialized countries will eliminate all use by 2010. While developing countries such as ours is in compliance with its freeze measures i.e. consumption by 2002 based on average 1995-1998 consumption levels.

The Government of the Gambia showing its firm commitment to phasing-out of consumption of ozone Depleting Substances (ODSs) ratified the Vienna Convention for the Protection of the Ozone Layer in July 1990 and the Montreal Protocol on Substances that Deplete the Ozone Layer in July 1990. The Gambia has also ratified the London Amendments to the Montreal Protocol in March 1995.

The Gambia is a developing country and therefore stands to benefit from the assistances provided under the Multilateral Fund of the Protocol (Article 10).

The Country Programme was approved by the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol at its 19th Meeting held in Montreal in May 1996 with approved financial assistance to sponsor the following programmes, namely:

- Ozone policy strategy development and institutional strengthening by the creation of a National Ozone Office
- Training in refrigeration of technicians, users and repairmen on refrigerant handling recovery and recycling as well as retrofit techniques
- Training of customs officials to set up and enforce a system for the identification, monitoring and control of imported ODSs
- Conversion of a block foaming machine to eliminate the consumption of CFCs.

The Gambia ODS consumption has witnessed a gradual decrease from 23.3 ODP tones in 1994 to 1.06 OPD tones in 2006 which is 95.5% reduction over the years since the inception of Ozone Action Programme in 1997. This is made possible through the effective involvement of all stake holders, training of local refrigeration technicians, Customs and other Security officers, public awareness and the involvement of schools and over all commitment of the Gambia Government to its international obligations and protection of its citizenry.

3.2 Biological Diversity (biodiversity)

Biodiversity is defined as “the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems¹.” As such, biodiversity is life itself, but it also supports all life on the planet, and its functions are responsible for maintaining the ecosystem processes that provide food, water, and materials to human societies.

3.2.1 State

Biodiversity is under heavy threat and its loss is considered one of the most critical challenges to humankind. Current rates of extinction exceed those in the fossil record by a factor of up to 1000 times. The interim report of the global study, “The Economics of Ecosystems & Biodiversity (TEEB)” reinforces the conclusion of the Millennium Ecosystem Assessment that ecosystem services are being degraded or used unsustainably with severe socio-economic consequences for human societies and for the future of all life on the planet.

The terrestrial surface of the Gambia in the past three decades was covered by a dense forest, estimated at 47% of total land area of the country (NBSAP, 1999). The forest was diverse and rich in wildlife, providing habitats to a variety of large mammals, many of

which have now become rare or locally extinct. Over the period, the country lost over 13 species of mammals and an unknown number of floral species. Human population density coupled with the overall decline in annual average rainfall of 25-30% and poverty in The Gambia continue to be major driving forces for environmental and natural resource degradation. The majority of Gambians depend directly on biological diversity for social, ecological, economic, cultural and spiritual purposes. The importance of biodiversity to human wellbeing and survival remains elusive, ecosystems are being degraded, species and genetic diversity reduced at an alarming rate, due to routine negative practices of a growing human population placing increased demands on resources for consumption. However, the country is endowed with rich and varied ecological systems. These are closed and open woodlands, trees and shrub savannah, wetland ecosystems (**Photo 2**), grass land savannah, offshore islands, marine and coastal ecosystems and agricultural ecosystems. The exploitation of these ecosystem resources for economic and social development provides the basic means of attaining livelihood, employment and other national development needs and services for the majority of the population.

The current situation of biodiversity goods, services and products in the Gambia indicates that the resources are declining and the situation is likely to worsen, unless appropriate regulatory and management measures are undertaken.

A total of 3, 335 fauna species have been recorded to date (**Table 4**). This is quite an under representation in this part of the tropics, where one would expect to find hundreds of thousands of floral and faunal species.

Table 4: Number of Fauna Species Recorded in each Taxonomic Group

Taxonomic Groups	Number of species recorded in The Gambia
Plasmodium	1
Omycetes	4
Arachnids	7
Insects	784
Crustaceans	6
Molluscs	10
Echinoderms	1
Fishes	627
Amphibians	33
Reptiles	74
Mammals	125
Birds	566
Fungi	78
Ferns	12
Cycads	1
Conifers	1
Flowering plants	1,005
Total	3,335

Figure 6: Number of Fauna Species Recorded for each Taxonomic Group

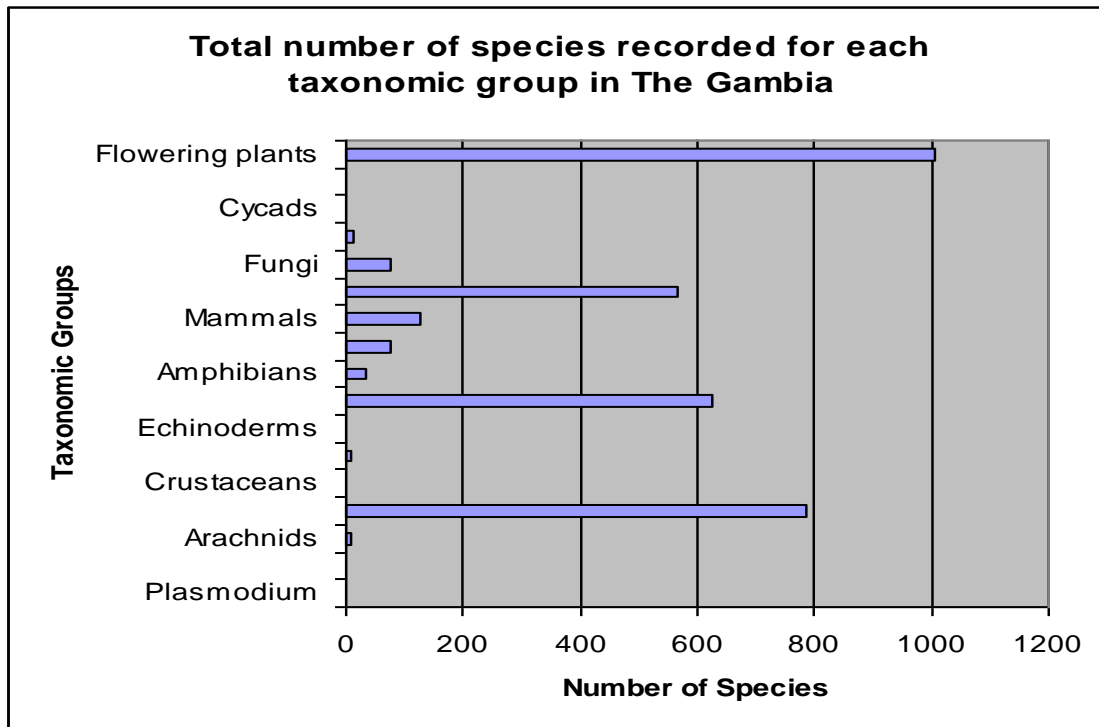


Photo 2: Biodiversity-Rich Wetlands of Farafenni, North Bank Region

Non-sustainable utilization of natural resources has been in existence since time immemorial as a result of religious and cultural beliefs. The wrong perception of natural resources as free goods for the poor and resources for the commons generally, that are replenished by God, has proved to become a catalyst for continued overexploitation, posing serious challenges and threats to biodiversity in a fast growing nation like the Gambia. Conservation is still faced with the challenges of increasing demand for environmental goods and products such as food, water, housing materials and land, just to name but few. In the absence of any significant improvement in livelihood of many rural Gambians, continued exploitation of the natural resource base. The non- sustainable utilization practices including mangrove cutting as an alternative for fuel wood in much of the Greater Banjul area and for fencing and roofing purposes in the North Bank Region (**Photo 3**) point to a grim future for biodiversity and its dependent human populations. Unregulated and illegal hunting practices are common throughout the entire country. Destructive fishing practices in its various forms are common in the Greater Banjul Area and beyond to the lower reaches of the River Gambia and the rest of the country.

Illegal harvesting of thatch grasses and the cutting down of tree branches to collect wild fruits is a common non-sustainable method of natural resource utilization, a practice often perpetuated by cross border poachers at Bao Bolon in the south bank (Bao bolon Management Report, 2007), Shifting cultivation and itinerant farming practices that enable a sizeable population to establish ownership over every single strip of land leads to further fragmentation of wildlife habitats and destruction of migratory corridors. Illegal logging of timber and fuel wood is rampant in the Fonis, Jarras, Kombos, URR and the Kiang West area. Industrial and household waste dumping into wetlands of Tanbi National Park, Tanji Bird Reserve and Kotu Creek is of serious concern. Continued erosion along the Atlantic coast has been attributed to numerous illegal sand mining activities in the areas of Kartong and Bijilo. Unregulated charcoal burning activities in Kombo East around the villages of Tubakuta, Ommorto, and Giboro demonstrate the increase dependency on natural resources by the population for their livelihood. Land tenure rights and the demand for land outside traditional farming areas is also steadily leading to massive cutting down of mangroves to cultivate rice in the North Bank Region. Local level intervention to restore rice ecologies through the construction of non-environmentally friendly anti-salt dams in the region have resulted into the abandoning of potential rice growing zones in areas such as Farafeni, Kosemar, Foni Jarrol etc (Rice and Mangrove Survey Report 2007).



Photo 3: Mangrove harvesting for domestic and commercial purposes

The Gambia's land territory is covered by a dense forest, estimated at 47% of total land area (NBSAP, 1999). Large areas have been cleared for groundnut cultivation particularly in the North Bank Region and specifically in the Niumis and Badibus and the Central River Region of Fulladu districts, Sillah (1999). The forest cover which encompassed wildlife habitats is steadily dwindling as most of the big trees and coastal gallery forest have disappeared, and the habitat is no longer suitable for larger mammals such as the elephant, lion, leopards and antelopes due to its opened and fragmented nature. A total of 3,335 species have been recorded to date, this is quite an under representation in this part of the tropics, where one would expect to find thousands of species. However, there has been some negligible progress during the Forest Policy period (1995-2005). The target was 30% of the land to be forested by 2005, but records in 2004 showed that, the total forest cover increased from 42% to 43%. (Forest Policy 2006-2016). Today almost 76,029 ha is being managed under community forest and State forest reserves, while the Department of parks and Wildlife Management is managing 45,800ha (plus a proposed Biosphere Reserve estimated at 80,000ha of terrestrial and Wetland ecosystems). In spite of all these, protecting these resources from being misused remains the most difficult challenge in conservation, as a result of the unsustainable usage of forest resources (wood and non-wood products), expansion of agricultural activities and frequent fires, most of the forest vegetation have undergone changes more often to secondary succession resulting to lesser dense forest and lower plant species diversity.

The data of 1980, 1993, 1999, and 2005 reflect the area of forest cover in percentage of the national territory of 1,129,500 hectares. **Table 5** below shows changes in Forest Cover from 1946 to 1999. The reference for those of 1946 and 1968 is not known. The

comparison of the figures of 1946, 1968, 1980, 1993 and 2005 is limited due to different classification used. Those of 1999 and 2005 are estimations.

The national forest inventory results of 1981- 1983 showed that 45% of the Gambia was still covered by forest with total forest area of 505,300 ha. The largest proportion of the forest land (i.e. 34,7300ha) was tree and shrub savannah. The changes in forest categories have been mainly due to shifting cultivation, clearance for agriculture due to high population pressure, institutional deforestation as a result of exploitative policies, bush fires, and illegal exploitation.

Table 5: Changes in Forest Cover from 1946 to 1999

Land cover type	1946	1968	1980	1993	1999
Closed woodland (%)	60.1	6.0	1.3	1.1	0.7
Open woodland (%)	13.3	17.6	10.7	7.8	6.2
Savannah woodland (%)	7.8	31.7	24.8	31.8	34.6
Total forest cover (%)	81.2	57.3	36.8	40.7	41.5
Population density (person per km sq)	25.0	35.0	57.0	91.0	10.8

Prime Wetlands and river banks have been altered dramatically through clearance of the vegetation cover, poor agricultural developments with serious consequences for biodiversity. Damming up-river in part of the Lower River Region might have affected the ecologies of mangroves causing dieback (**Plate 4**) due to its effect on the flow system and the increase concentration of salt in that part of the river estuary.



Photo 4: Mangrove dieback as a result of damming

The Gambia is becoming less biologically diverse in terms of genes, species, and ecosystems because the country has lost over 13 species of fauna (e.g. elephant, giraffe, buffalo, eland etc) and unfortunately limited by the lack of understanding of the role of biological diversity in the sustainable functioning of the biosphere. Sadly, there is little understanding of the social, economic, or eco-systematic consequences of less biologically diverse Gambia.

Forests are crucially important to the biological diversity of several life support systems; they provide energy and materials for the construction industry, food and medicine for our rapidly increasing population. About 48% of the country's total land area is under forest cover with woodland accounting for 10% and the remainder consisting of savannah woodland and the mangroves ecosystem, which is estimated to cover over 66,000ha. (Source: National Biodiversity strategy and Action Plan, Final Report)

There are 66 forest parks covering a total area of 34,729ha of which about 7,000ha are under community management approach. The forest ecosystem has dramatically changed in the last two to three decades from being a dense and biologically diverse environment to its present bare state. Rapid population growth is the single most important cause of this state of affairs of the forest ecosystem.

Wildlife resources form an important component of the country's biotic assets from both ecological and economic view-points. There are 7 wildlife protected areas occupying a total land area of over 40,000ha constituting 4.1% of the country's total land area. According to the available data, there were over 180 species of wild animals in the Gambia of which 13 species are extinct (**Table 6**) and a similar number threatened with extinction. (R&D Unit, DPWM).

Table 6: Status of Gambia's Large Mammals and Primates

Scientific Name	Common Name	Status
Phacocherus aethiopicus	Warthog	Common
Potamocheirus porcus	Red-river	extinct
Hippopotamus amphibious	Hippopotamus	localized
Girrafa camelopardalis	Giraffe	extinct
Ourebia ourebi	Oribi	rare
Tragelaphus scriptus	Bushbuck	common
Tragelaphus spekii	Sitatunga	rare
Hippotragus equines	Roan	rare vagrant
Kobus ellipsiprymnus	Waterbuck	rare (vagrant)
Kobus kob	Kob	extinct
Damiliscus lunatus	Western korrigum	rare
Tragelaphus oryx derbianus	Derby eland	extinct
Syncerus caffer	Buffalo	extinct
Loxodonta Africana	Elephant	extinct
Trichechus senegalensis	Manatee	common
Lycanon pictus	Wild dog	extinct
Aonyx capensis	Cape clawless otter	rare
Crocuta crocuta	Spotted hyaena	common
Hyaena hyaena	Striped hyaena	extinct
Panthera leo	Lion	extinct
Panthera pardus	Leopard	rare
Leptailurus serval	Serval	rare
Caracal caracal	Caracal	rare
Profelis aurata	Golden cat	rare
Gazelles thomsonii	Thomson gazelles	extinct
Equus grevyi	Zebra	extinct
Damaliscus lunatus	Topi	rare (vagrant)
Damaliscus corrigum	Hartebeest	extinct
Papio papio	Baboons	locally common
Cercopithecus aethiops	Calithrax	locally common
Colobus badius	Red Colobus	locally common
Cercopithecus mitis	Blue monkey	rare
Galo senegalensis	Bush baby	common
Erthrocebus patas	Red patas	locally common
Pan troglodytes	Chimpanzee	extinct

The domestic animal (Livestock) resources of agricultural importance are quite considerable and the potential for further development of the livestock resources is bright. The 1993/94 national livestock census revealed that the country's livestock population comprises of 287,376 heads of cattle, 115,589 sheep, 213,732 goats, 17,556 horses, 33,448 donkeys, 14,000 pigs, and 740,000 poultry birds. In spite of the

increasing trend in the livestock population, the demand for livestock is still greater than supply.

3.2.2 Pressure

Over the past 3 decades, biological resources have been the subject of misuse and overexploitation by man. Recent population trends accelerate and deepened the process of overexploitation and consequently, the degradation of natural resources in the Gambia.

With a fast growing population, the demand for sustained food production systems, to provide shelter, water, clothing and better education compelled many poor rural and urban dwellers to venture into extractive harvesting methods that only further constrained future livelihood potential for the poor. The daily demand for fuel wood, for construction materials and for income clearly underpinned the increase in illegal hunting, fishing, harvesting of green wild fruits for food and medicine and intrusion into non-traditional cultivable land, among other non-sustainable practices. Trawler fishing within Gambian waters might have destroyed sea grasses and introduce aquatic invasive weeds, which consequently deplete fish. Such pressures however are further influenced by population density. (Biodiversity Policy 2002)

Proliferation of “Chain Saw Machines” further advances human ability to destroy indigenous woody tree species such as *Khaya senegalensis*, *Pterocarpus erinaceus*, *Cordia africana*, *Prosopis africana*, *Terminalia macroptera*, *Diosphyrus mespiliformis*, *Danielia oliver* in many parts of the Gambia.

Over cultivation of agricultural farm land:

Agricultural productions system employed in crop farming consist of an intensive land used type, characterized by low level of inputs. Shifting cultivation is still widely practiced in The Gambia, even though fallow periods have considerably reduced as land becomes scares in most farming communities. The compounding effect of high population pressure and the scarcity of land has forced farmers to intensively cultivate a piece of land year after year. This exhausts the soil nutrients and ultimately leads to decline in crop yields. Land placed under continuous cultivation further becomes eroded with the eroded material transported to low lands area causing sedimentation.

Deforestation:

Deforestation continues to be a major contributing factor responsible for the degradation of most of the Gambia’s land cover. The State of The Environment Report for the Gambia (1997) projected that there was an 80% decline in the quality of open and closed forest between the periods of 1968 to 1983. The report further revealed that the cultivable land area has extended into forest areas from 274,000 ha in 1980 to 336,200ha in 1988. The removal of the remaining forest cover continues unabated.

Bush Burning:

During the long Gambian dry season, bush fires are a common feature of the rural landscape. Bush fires are major threats to species diversity (**Photo 5**). According to estimates, at least 80% of the standing biomass is consumed by fires in a given year (Forster, 1983). The inability to regulate and control wild forest fires are influenced by persistent old-fashioned policies being pursued, which completely lack clear-cut measures. There is an urgent need to design new policy frameworks that recognize and adapt to current thinking and practices as they relate to natural resources. The early-dry-season control burning method for example proves considerably successful in Niokolokoba National Park in Senegal.

Photo 5: Rangers of Bao Bolon trying to Control Wild Fire



Overgrazing:

Livestock are reared on an extensive free range system in open grasslands and in rangelands. Due to the high stocking density and the incidence of annual bush fires, which consume most of the feed resources, there is always a scarcity of animal feed during the dry months of the year. The convergence and concentration of livestock in and around isolated pockets of remaining grazing areas after wild fires leads to overgrazing and eventually soil erosion.

Fuel Wood Extraction:

The cutting of trees for fuel wood is among the leading causes of deforestation in the Gambia. It is reported that forest in the Gambia provides 85% of the country's domestic energy needs in the form of fuel wood for over 90% of the population. They are also said to provide 17% of the timber used for construction (NBSAP, 1999). As the population continues to increase, the fuel wood demand continues to increase unprecedentedly and put more pressure on the country's remaining forest resources. Currently, fuel shortages are being experienced in many part of the country as the populations of preferred woody species continue to decline. The market demand for certain species of fuel wood compelled wood vendors to harvest life trees.

Poaching and uncontrolled hunting:

Hunting is an important economic and social activity in the rural areas as bush meat forms an important part of the dietary requirement of the local population. However, the hunting needs, which in most cases fail to observe breeding seasons, have had catastrophic impact on wildlife numbers. However the loss of large wildlife and extinction of species in The Gambia have been partly influenced by a hunting style, locally known as 'Binjano' which means that a hunting party is organized in a way where a large strip of forest is put on fire surrounded by a large congregation of hunters who kill every consumable animal seen. This detrimental exercise was commonly practiced in Kiang West but abandoned and abolished in 1977, after the Banjul Declaration was announced.

Over fishing of fish stocks:

Although it is reported that the Gambia is endowed with adequate fish stocks, certain activities in the fishing sector such as use of wrong fishing gears and use of trawlers is of concern to the authorities. It has been established that The Gambia is harvesting only 40% of the Maximum Sustainable Yields (MSY) for the demersal fish species (Saine et al. 1997). There are however real dangers of over exploitation if adequate measures are not put in place. In the inland waters, fish stocks have been observed to have declined based on returns per fishing effort. Use of illegal fishing gears and intrusion by foreign trawlers has been considered responsible for such state of affair.

Coastline Sand Mining:

The burgeoning construction industry has always been a major user of beach sand. In the quest to meet this ever-increasing demand, sand mining has become a highly disorganized and chaotic local industry. Although there are attempts by government to control the activity, there is still a lot of illegal sand mining going on particularly around Mandinari.

The Gambia's population has grown four folds in the past forty years, which asserts a considerable pressure on the resources. The demand for settlement, land for cultivation, itinerant methods of cropping, forest fires, illegal exploitation of resources, deforestation, inappropriate harvesting and commercialization of forest resources, decline in annual rainfall, poverty, inadequate public awareness etc are some of the driving forces responsible for the unprecedented changes in vegetation and habitat cover.

Loss of animals and plant species has become an evolutionary trend, which has been steadily observed. The key pressures/problems contributing to the loss of plant or animal biodiversity are but not limited to, rapid increase in population with resultant implications for settlement, food, water, lack of clear land use and demographic policies, deforestation, attitudinal changes, low and uneven distribution of rainfall, lack of awareness and uncoordinated and conflicting sector policies as well as unmitigated socio-infrastructure developments.

3.2.3 Impacts

The impact of non-sustainable utilization of natural resources varies, but the underlying consequences are detrimental to the future wellbeing of the people. In The Gambia, non-sustainable use of the natural resource base has brought immense benefit to individuals and business at the detriment of the majority. The impacts of unregulated use includes loss of forest cover, declining fish stock and sizes, decreasing wild fauna and floral diversity, increased by-catch of marine mammals with resultant poverty, extinction, and habitat degradation (ICAM/Miir Newsletter October 2007)

As a shortcoming of the early economic policies and programs, the environmental sector was largely ignored. As a result, the sector declined and reached a crisis point in the late 1980s. In response to the growing environmental crisis, the government formulated and adopted the Gambia Environmental Action Plan (GEAP) in 1993. The GEAP was intended to provide a framework for the complete and total management of the Gambia's environment. It identifies all the major factors contributing to environmental degradation, proposed solutions and laid down both legal and institutional framework for its implementation.

Another direct impact of non-sustainable utilization of natural resources in the Gambia relates to poverty among the general population. Since the vast majority of the population is dependent on the exploitation of natural resources for their livelihood, there is a strong linkage between degradation of these resources and poverty levels. In the absence of exploited non-renewable natural resources, the country depends entirely on the exploitation of renewable natural resources for development. Agriculture, fishing and tourism continue to be important sectors of the national economy. Over the past three decades, however these sectors have been adversely affected due to a number of factors.

Decrease in vegetation cover, encroachment into remaining forests, depletion of soil fertility and carrying capacity of the range and degradation of land-based resources is conceived as the centre of the problem.

The change in tree species composition to more fire resistant species is still steadily pushing the natural vegetation woodland species to almost extinction. Most of the forest vegetation has undergone changes more often to secondary succession, resulting to lesser dense forest, poor regeneration potential, and lower species diversity.

There is immeasurable socio-economic and ecological impact on the loss of plant/animal biodiversity in the Gambia. These includes loss in medicinal value (plants) and associated loss in diversity of genes (animals) as a direct/in-direct result of rapid population growth coupled with its associated need and demand for shelter, food and other social requisites.

2.3 Response

The 1977 policy statement entitled the “Banjul Declaration” was made, as a comprehensive piece of policy statement, which for the first time recognized the alarming rate at which the country’s fauna and flora were disappearing. The Banjul Declaration as a policy statement gave birth to the 1977 Wildlife Conservation Act. This historic policy statement influenced the establishment of the then wildlife conservation unit under the Office of the President, which in 1981 was upgraded to a fully fledged Department of Parks and Wildlife Management charged with the responsibility of sustainably managing wildlife resources and setting aside protected areas as wildlife sanctuaries.

The Department of Forestry in recognition of its limitation in terms of effective utilization of the country’s forest resources developed a new approach involving community participation in forest management through the programme of Community Forestry Management (CFM). The CFM was introduced in 1989 and has registered major successes in areas where it was tried, even though the land cover continues to disappear.

In a concerted effort to address the environmental and natural resources management problems of the 1970s and 1980s, the government prepared and adopted the GEAP in 1992. The GEAP was intended to provide a legislative and policy framework for the management of The Gambia’s environment. It identified the major environmental issues of concern and proposes government actions to address them. The GEAP was implemented over a 10-years period commencing in 1993 and registered major achievements in terms of capacity building, institutional strengthening and improved coordination of the different actions and strategies of government institutions, NGOs and the private sector. Perhaps more importantly, the GEAP has established a mechanism for continuous dialogue and regular consultations in environment and natural resources management in the country.

As part of her commitment to the management of the global environment, The Gambia had ratified many international Multilateral Environmental Agreements (MEAs) such as the Convention on Biological Diversity, United Nations Framework Convention on Climate Change and the UN Convention to Control Desertification with most of their associated protocols.

The Convention on Biological Diversity (CBD) was ratified in June 1994 and the subsequently the National Biodiversity Strategy and Action Plan (NBSAP) was completed in 1999. The NBSAP is now the main framework for Biodiversity management in The Gambia addressing all the areas affecting biodiversity in the country including such important areas as in-situ conservation and benefit sharing arising from the exploitation of biodiversity resources. Subsequent to the NBSAP, a new Wildlife Policy was developed in 1998 and has one of its objectives, to increase the area of the country under national parks from its present level of 4.1% to 10% of the total land area of the country by 2015 in accordance with the national target for MDG 7. The protected areas, which are managed by the Department of Parks and Wildlife Management, represent the last remaining samples of the different ecosystems that once existed in the Gambia.

As one of the low-lying countries likely to be affected by climate change, The Gambia attaches great importance to climate change issues. The Framework Convention on Climate Change was also ratified by the Gambia in June 1994. The development of the National Plan of Action for Climate Change adaptation in The Gambia started in 1998 and was completed by 2002. A national Greenhouse Gas inventory was carried out in 1993 and updated in 2000. The inventory identified all the major sectors, which are emitters of Greenhouse gases as well as the quantities emitted per sector. Based on the findings of the inventory, the action plan is expected to influence a number of strategies, which are mainly of adaptation to Climate change and climate variation.

The Gambia is also seriously affected by land degradation/deforestation. The Gambia ratified the UN Convention to Combat Desertification in 1996 and complemented the National Action Plan (NAP) for desertification control in 2000. The NAP is a comprehensive action plan encompassing all the major areas contributing to the process of desertification in the country and will be implemented over a period of 15 years. The major problem affecting NAP implementation in the Gambia is the lack of sufficient funds for practical implementation.

The recent government programme of local Government Reform and Decentralization is also a milestone in terms of natural resources management in this country. The programme, which seeks to empower local communities in the running of the state of affairs, is expected to strengthen community management approaches of natural resources. In that way, natural resources will be community owned as opposed to being an open resource and is expected to address the undesirable state of the natural resources. In pursuit of its policy of encouraging community participation in biodiversity management in general and protected area in particular, the Department of Parks and Wildlife Management through Program of Work on Protected Area POWPA project is promoting community policing system geared towards mobilizing the community into taking action to control natural resources use at the local level. The campaign also promotes the principles of benefit sharing, where benefit of commercial utilization will be paid back to the custodians of the particular community or locality (**Photo 6**).



Photo 6: Community Sensitization and Promotion of Sustainable Livelihood

In 1950, sixty-six (66) forest parks (34,049ha) were established, 65% of the parks were established for soil protection, 14% for production of timber and 21% for bamboo. At the moment there are 18 managed Forest Parks either under Gmelina plantations or under a natural forest management system.

Over the last couple of years, the Government of the Gambia has taken various legal, policy and institutional measures to promote the conservation and sustainable use of the country's biodiversity. The earlier approach was to develop sector specific laws and policies. However, the most recent policy initiatives have adopted new strategies for developing a comprehensive development policy framework, institutional strengthening of administrative and legislative capacities, public education to create greater awareness, community conservation and research. The Government of the Gambia's commitment to environment governance, albeit in a piecemeal approach, dates back to the Banjul Declaration of 1977 for the protection of the environment. This was followed by the creation of the Ministry of Agriculture, Natural Resources and the Environment, and the Environment Unit in 1981, currently transformed to the National Environment Agency. Several cross-sector policies, legislation and action plans and strategies such as GEAP, NEMA, NBSAP, to mention just a few have been initiated. These approaches led to a considerable degree of progress/improvement in the areas of integration, harmonization and co-ordination of sectorial policies and programmes by all actors and stakeholders in the area of biodiversity and environmental conservation and management. In addition, progress has been achieved in the on-going rehabilitation of some extinct primates (chimps) at the River Gambia National park (Baboon Island) as well as the elaboration of management plans and strategies for some protected areas such as Kiang West National Park, Niimi National Park, Bao Bolon Wetland Reserve and Tambi Wetland complex respectively.

A considerable degree of progress/improvement had been made in the area of public sensitization and awareness campaign at all levels of the Gambian Society (formal and non formal) about the urgent need for attitudinal changes for sustainable and rational biodiversity conservation and utilization, however, the desired impacts are yet to be achieved.

Given the coordinated efforts of all actors in animal and plant biodiversity conservation for sustainable development, there are a lot of opportunities for sustainable investment in the concerned sectors. Such opportunities may be enhanced by the existing legal, policy and institutional framework initiated by various natural resources sectors and local communities, majority of which are coordinated by the Natural Resources sectors, local sectors and local communities, majority of which are coordinated by the National Environment Agency. Opportunities for investment include eco-tourism, sport fishing and hunting, community forest development, village woodlots, private game parks and forest, game farming (wild and domestic) and Botanical gardens for medicinal plants and tourism.

Biodiversity in the Gambia, is faced with several direct threats including the loss and fragmentation of the natural habitats due to deforestation, wetland drainage,

infrastructural development, overgrazing and poor farming practices, as well as, indirect causes including human population pressure, Poverty, Forest destruction is the biggest threat to biodiversity in the Gambia. There is a need to reassess a complex of policies covering land tenure and trade in forest products. Wider international co-operation and assistance are vital to facilitate conservation and sustainable use of the resource base, especially since deforestation has global consequences in relation to Protecting World Climate and conserving its biological resources.

The Gambia faced a rapid degradation of forest and Agro forest resources causing loss of biodiversity, decline of land productivity and subsequently food, nutrition and environmental insecurity, the Government has initiated various policy strategies and development programmes aiming at reverting land degradation, Conserving and enhancing biodiversity as well alleviating poverty. The GOTG development strategies in natural resource management/development agenda in preparedness to confirm its commitment to the policy based documents focused on:

- The Banjul Declamation (1977)
- The National Action Plan for the Environment (1997)
- National Environment Legislation (1997)
- Climate Change (1997) National Plan of Action (NAPA)
- National Biodiversity Strategy And Action Plan - NBSAP (1999)
- Forestry Action plan (2000)
- National Action plan (2000)
- National Action plan to Combat Desertification (2000)
- Biodiversity/Wildlife legislation (2002)
- Biodiversity/Wildlife Act 2003

These initiatives are supported by the development and implementation of the decentralization policy, which intends to place management of natural resources including Forestry and Agro-Forestry under the responsibility of the Local Communities.

It is equally strongly endorsed at the national level that the primary responsibility for conservation and ensuring sustainable use of biodiversity should be the duty of every Gambian at all levels of society. Local communities, particularly resource users around recently declared national park call Tanbi, already practice this initiative. Community policing systems around Tanbi have now strengthened efforts of conservation agencies in controlling and managing known fish breeding sites, manatee creeks and other sensitive ecological sites within and around Tanbi (**Photo 7**).



Photo 7: Management and Conservation of Manatee creeks in Tanbi Wetland Complex

Box 3: Recommendations

1. Protect, Conserve and Maintain the biological diversity in-situ including inter-alia Forest Biodiversity, Inland ecosystems, Coastal and Marine Biodiversity, agricultural Biodiversity, and terrestrial Biodiversity (wildlife) through the following measures:
 - (a) Protect critical ecosystem and natural habitats outside designated Forest Parks and Protected areas
 - (b) Rehabilitate Critical degraded ecosystems and protect endangered species
 - (c) Establish and manage a system of protected areas representative of major ecosystem types and unique or threatened natural habitats
2. Identify, assess and monitor on a regular basis the status and trends of the components of biological diversity for timely intervention to arrest processes and activities that are likely to have an impact on biodiversity.
3. The GOTG should seek to maintain a regularly updated audit of forest resources and estimate the minimum viable limit under which forest cover should not be allowed to fall, undertake reforestation and afforestation programmes where necessary, review the terms of concession and ensure that they reflect fully all environmental costs.
4. Adopt policies, measures, tools, methods and technologies that promote sustainable use of biodiversity.

3.3. Land

Land is the basis of most production in The Gambia. The crops grown to be used as food, the animal reared to provide food in the form of meat and milk, the water for drinking, the vegetation from which food is derived, as well as medicines and other important

benefits are all derived, directly or indirectly, through husbanding the land in a certain way. This reality underscores the pivotal role of lands as a life supporting systems whose sustainable utilization as enshrined in The Gambia Environmental Action Plan II (GEAP II) is critical to the achievement of sustainable development in the country. With few manufacturing industries, Gambians depend on natural resources, including land, for most of their needs in life. Agriculture and natural resources account for up to 30 per cent of the country's Gross Domestic Product (GDP), and employing directly or indirectly over 75 per cent of the country's workforce.

3.3.1 State

The total forestland area of The Gambia, which is about 43 percent of the total landmass of the country, is estimated at approximately 505 300 hectares include the mangrove forests. Approximately 32,729 hectares, which is 7% of the total forest area, constitutes the 66 gazetted forest parks. Currently the state forestland area is the largest (78%), while no areas are identified as protection forest. Community and private forest areas, which register some 17 487 ha, are expected to increase as more state forestland is brought under the management of those categories (Sillah, 1999).

Forty-Three percent (43%) of the country's total land area is under forest, which can be classified into open and closed woodlands (FAO/Sillah, 1999), with close and open woodland accounting for just 10% and the remainder consisting of Savannah woodland. The Gambia's forests can be divided into open and closed woodlands, though further distinction can be made based on composition and structure.

Sudanian woodland dominates with Guinea woodland confined primarily to the southwestern part of the country. Guinea woodland now appears in small relic patches, which have considerable bio-diversity value for numerous species of flora and fauna (e.g. 26 species of birds are specifically associated with this closed canopy forest (Ludwig and Bojang, 1998).

The following land cover categories are found in The Gambia:

- 'Closed Forests'-defined as forests with a canopy cover exceeding 50% and tree height of at least 11m (though not including mangroves);
- 'Open Forests' have a crown cover of 10 – 50%, and
- 'Savannah Areas' have crown cover of below 10 %. 'Cultivated areas' are crops and crop fields with relatively few or no trees, while the category, 'Other areas' includes mangroves, swamps, water cover, un-vegetated areas and human settlements (**Table 7**).

Table 7: Land Use Change in The Gambia (1980-1993)

Land use category	1980	1993	Change

	(ha)	(%)	(ha)	(%)	(ha)	(%)
Woodland	14,400	1.3	12,000	1.1	-2,400	1.1
Savannah woodland	121,600	10.7	88,800	7.8	-32,800	-2.9
Tree & shrub savannah	280,400	24.8	360,800	31.9	80,400	7.1
Agriculture with trees	84,000	7.4	85,200	7.5	1,200	0.1
Agriculture no trees	226,400	20.0	241,200	21.3	14,800	1.3
Fallow area	138,800	12.3	89,200	7.9	-49,600	-4.4
Mangroves	68,000	6.0	59,600	5.3	-8,400	-0.7
Others 198,800	198,800	17.6	195,600	17.3	-3,200	-0.3
Total	1,132,400	100.0	1,132,400	100.0	0	0.0

Sources: FAO, 1999

Between 1967 to date, six additional areas received either National Park or National Reserve status, making seven in all, the latest being the Tanbi Wetland Complex, a Ramsar Site which officially became a national park in 2008, the Bao Bolong wetlands in the North Bank Region having been designated as the first RAMSAR site. All the protected areas together cover about 3.3% of the national territory. The latest Wildlife policy aims at increasing this proportion to 5% considering a proportional regional distribution.

Forestry in the Gambia is an integrated live-support system to many Gambians and the resources contribute significantly to the living of the Gambian population. Trees and shrubs are commonly used in traditional medical treatments and for other uses. Many women especially in the Western Region rely on the natural forests for their subsistence (FAO/Sillah, 1999).

Agriculture has been a major foreign exchange earner for The Gambia, accounting for about 33% of the GDP, compared to 13 per cent contributed by the industrial sector (World Bank, 2007). The strategy to increase agricultural production, particularly groundnut production in the 1960s and 1970s, was through the introduction of animal traction, which increased the clearance of natural woodland cover (the prime source of fertile agricultural land). The introduction of animal traction in the 1950s and 1960s made it possible for farmers to cultivate larger areas. Thus, while the area under trees and shrub savannah increased by 7.1% between 1980 and 1993,

the area under savannah woodland and fallow decreased by 2.9% and 4.45 % respectively, over the same period (**Figure 7**). Overall, woodland cover in the Gambia progressively decreased to 57% in 1968 and by 1993, only 41% of the total land area was woodland.

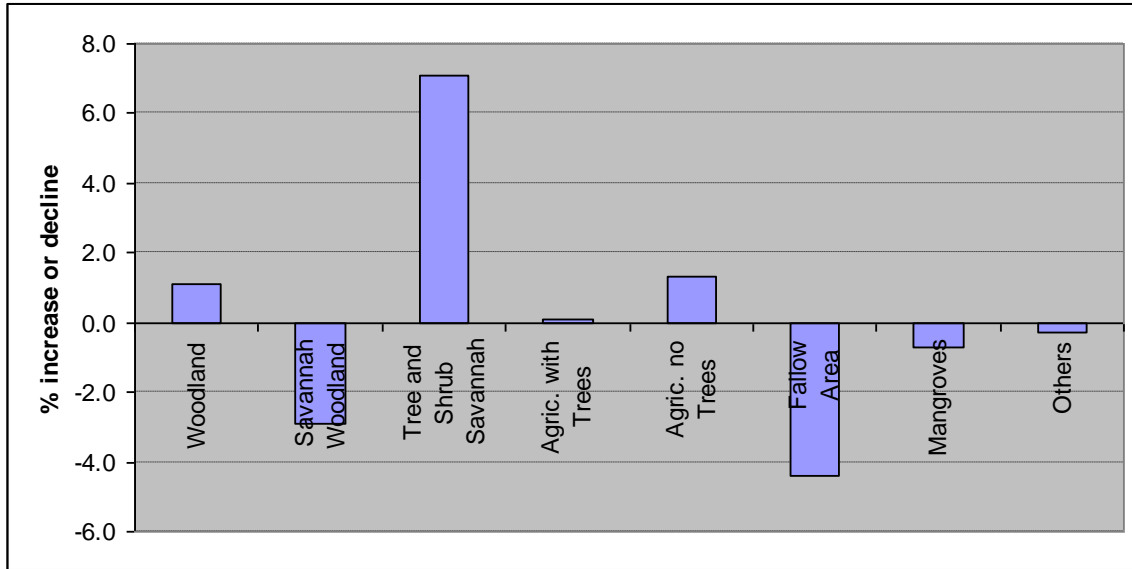
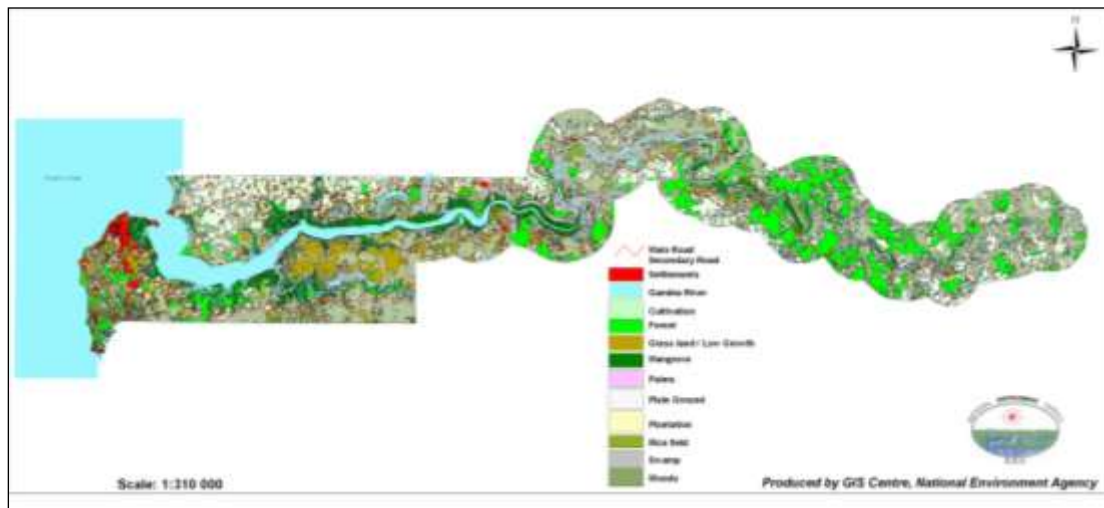


Figure 7: Changes in land Use/ Cover in The Gambia between 1980 and 1993 (FAO, 1999)

The patterns of land use in The Gambia, to a large extent, correspond to the vegetation zones across the country. The vegetation zones in turn are largely determined by the rainfall patterns of the different parts of Gambia. In general, the wetter western half of the country (which receives above 1,020 mm of rainfall) covering all of the Greater Banjul Area (GBA), the entire West Coast Region and the western parts of the Lower River Region, have thicker land forest covers of bigger tree species. These areas attract greater human settlements with the residents mainly engaged in both crop farming and logging. On the other hand, the drier hinterlands, especially the north bank of the River Gambia, receive scantier rainfall averaging 1800mm, and are covered mainly with shrubs and Savannah grasses. These lands are used for crop production and extensive livestock rearing in the grass covered areas (see **Map 1**).

The topography of The Gambia, another major determinant of land use, reveals three distinct levels or zones: the river with its associated tributaries and mangrove vegetation; the extensive lowlands forming the river's floodplain and the upland plateau, which extends into neighboring Senegal. The sandy soil associations of the plateau make it an ideal base for upland crops like millet, groundnuts, sorghum, and cotton, while the lowlands are used for swamp rice cultivation. The mangrove zone is largely unsuitable for any farming but commonly used for logging and oyster collection, which contribute to the degradation of mangroves.

Apart from bushfires, by far the greatest pressure on the vegetation cover of The Gambia is human population engaged in activities such as agriculture (which covers about one-third of all Gambian lands), illegal logging, charcoal burning, or hunting.



Map 1: Land Use Map of The Gambia

According to the GEAP (1992), land degradation/desertification is one of the leading causes of environmental degradation in The Gambia. Land provides a means of livelihood for an estimated 75 percent of the population, 38 percent of which are 10 years and below (**Table 8**). The majority of the farmers practise subsistence agriculture, which is the biggest foreign exchange earner for the country. Eighty three percent of the cultivated land holdings are less than 5 ha leaving a mere 17 percent above the 5 ha subsistence threshold. The total arable land has been estimated to be about 65 percent of the country's total land area.

Table 8: Population Structure of The Gambian Farming Communities (2006)

LGA	Children age Below 10yrs		Age 10 yrs and Above		Total Farmers	% of total Farming populat'n
	Male	Female	Male	Female		
Brikama	53,832	52,521	116,410	104,068	326,831	0.22
Mansakonko	17,001	14,013	21,083	28,145	80,242	0.05
Kerewan	36,417	38,089	53,628	57,710	185,844	0.13
Kuntaur	20,586	18,119	27,957	28,793	95,455	0.06
Janjanbureh	22,801	27,952	36,621	36,007	123,381	0.08
Basse	54,869	62,092	80,380	88,856	286,197	0.19
The Gambia	205,506	212,786	336,079	343,580	1,097,951	0.75
Projected pop'n 2006	<i>1,471,555.20</i>					

Source: DOP, NASS Reports, 2006

The major cause of forest degradation in The Gambia is human-induced bushfires. Some estimates suggest that on average, up to 70 % of forests are burnt annually, killing the regenerations, retarding the growth of most tree species and transforming the tree composition from mixed species to fire tolerant species. These factors have contributed collectively to poor soil fertility and declining crop yields over the years. This situation is worsening when crop yields are compared. Yields of cereals grew by 2.87 percent from 1994 -2000 and declined by 1.33% between 2000 and 2006 indicating that all the increase in production of cereals was coming from increase in land put to cereals. The outlook seems to indicate that land degradation will continue unless appropriate actions are taken to reverse the trend.

Integration of crop, livestock, and mixed farming, and pure multipurpose tree stands in early-established horticulture production systems characterize the inner fields dry season farming systems. Livestock, multipurpose tree species and horticulture integration remain a great niche but limited on a very small scale and in the inner fields complex (Kunjo, 2004). This system depends on the natural resource base and minimal use of external inputs leading to decline in crop yields and low soil fertility. Recent studies in cereal crop budget on maize stover and groundnut hay removal showed 0.03% organic matter loss in the upland cropping systems (DOP, 2006). As a result groundnut productivity continues to decline over the years due mainly to low nutrient capital and unpredictable rainfall. The horticultural sub-sector continues to expand with increased number of vegetable gardens implemented in the north bank and western regions (PSIP, 2007).

The combined effects of climate variability and rapid population growth have greatly altered land cover and land use in The Gambia over the past three decades. The one time tree-dominated 'Guinea Savannah' vegetation regime is quickly being transformed into a scantier, grass-dominated 'Sahelian' regime.

3.3.2 Pressure

By far the most significant pressure on Gambian lands is the rapid growth rate of human and livestock population. The Gambia is one of the most densely populated countries in Africa. For this reason, the requirements of land for agricultural production, animal grazing, the production of fuel wood and building materials, and human settlements take their toll on the finite natural resource.

The land is under severe pressure mainly from high growth of human and livestock population, lack of effective forest production and management system, uncontrolled bush fire and cutting of firewood, overgrazing and unplanned encroachment of cropping and human settlements (Ludwig and Bojang, 1998).

The Gambia experiences internecine human-induced bush fires during the dry season in most parts of the rural areas, thus exerting enormous pressure on the fragile forest and wildlife ecosystems. The bush fires are often caused by herdsmen setting fire to semi-green pastures in order to induce early re-growth used as succulent pastures, and by

hunters who use fire to drive out their game. Overgrazing by the large livestock populations greatly degrades natural resources such as tree and grass cover. Encroachments of farmlands and settlements driven by human population expansion are other sources of pressure on land in The Gambia.

The introduction of animal drawn implements since the early 1960s has led to soil degradation resulting in increased runoff and siltation in the low lands. With the shortening of fallow periods and minimal use of fertilizer (with 11.4% and 13.6% of fields fertilized in 2001 and 2006, respectively) crop production is greatly constrained by the low soil fertility (**Table 9**). Farmers are forced to practice slash and burn farming system, which reduces land cover.

The country's high population density continues to exert pressures on the land. Fuel wood contributes about 97% of the country's total household energy needs, constituting about 98% of rural household consumption and about 95.5% of urban household consumption (Household Energy Consumption Survey, 2004, Table 4.4). This high rate of fuel wood extraction has resulted in alarming rates of deforestation. Furthermore, activities such as fish processing adds to the pressures on the vegetation cover in the country. The total fuel wood used by the fish smokers to smoke about 9,800 tonnes of bonga fish was estimated at 7,800 tonnes per annum.

Table 9: Supply of Fuel Wood 2002-2006

Year	Firewood (m³)	Charcoal (bags)	% from Gambia
2002	19,408	72,142	55% firewood, and 2% Charcoal
2003	15,983	58,563	52% firewood, and 2% Charcoal
2004	23,264	138,304	48% firewood, and 1% Charcoal
2005	16,990	97,524	45% firewood, and 3% Charcoal
2006	13,777	49,432	43% firewood, and 3% Charcoal
Average	17,884	83,193	48.6% firewood, and 2.2% Charcoal

Source: Department of Forestry (Resource Inventory, (2002 – 2006)

Amendment of soil fertility using crop residue, and rotation with fallows are diminishing under population and productive land use pressure. Continuous cropping with limited external inputs results in the decline of crop yields. High livestock population depends on limited feed resource, over grazing and over exploitation of natural vegetation leading to soil degradation.

High input crop production, especially in the horticultural sub-sector depends on heavy use of pesticides causing resurgence of pests. Commercialized crop production in the form of orchards and gardens has claimed good proportion of the traditional livestock grazing areas with increasing pressure on productive land and water resources. The total

hectares under commercial crop production in 2003 are 284,764, which increased to 313,265 in 2004 under commercial system (DOP, 2004).

Surface water is important for both domestic and agricultural production in certain parts of Central River and Upper River Regions. The use of river water is limited by steep riverbanks and salt intrusion. Recently, concern has been expressed over the vulnerability of the water resources to over exploitation through boreholes or shallow wells and pollution especially from salt intrusion.

The overall implication of the farming system is a degenerating natural resources base leading to a persistent decline in production systems carrying capacity, especially for crops of high input demand such as maize and groundnuts. This low productivity has increased poverty and household food insecurity.

3.3.3 Impacts

The present state of The Gambian soils indicates a high degree of degradation resulting from a combination of human and climatic factors. The rate of desertification was estimated at 7% (Sillah, 2002). Soil erosion by both water and wind is quite widespread throughout the country. The eroded soil material is usually deposited in the lowlands further compounding the problem of land degradation. An acidity problem is also widespread due mainly to reduced rainfall and shortening of the fallow period.

In the lowlands, reduced rainfall and drought has led to a build-up of salts, which has rendered most of them unsuitable for rice production. Formerly, areas known in the local Mandinka language as *wulumbangos* and *bantafaros* were the main sources of rice with little cultivation in the back swamps or tidal swamps. As the climate became drier, the *wulumbango* and *bantafaro* rice production declined and large areas South of Carroll's Wharf were abandoned. Fertile land on the edge of the flood plains was transformed into barren mud flats due to saline encroachment, evaporation and drying of potential acid-sulphate soils. In the western region rainfall is relatively better than elsewhere in the country; households are no longer able to transplant rice in the *wulumbangos* and, therefore, reverted to broadcasting short duration varieties. This trend in terms of land degradation is likely to worsen for the foreseeable future unless concerted efforts are made to reverse the situation. In this regard, it is encouraging that the relatively hardy and early-maturing New Rice for Africa (NERICA) is being promoted, and actively adopted throughout the country.

3.4 Responses

The Gambia's responses to land cover and land use pressure are varied, and have been met with varying degrees of success. The responses range from national legislation, ratification of international conventions and treaties, to the design and implementation of environmental and natural resource policies and action plans. With regards to meeting the

country's international obligations, the three United Nations Conventions on desertification, biological diversity, and climate change, have all been ratified.

The National Environment Management Act of 1994 (NEMA, 1994) is the most comprehensive up-to-date piece of environmental legislation in The Gambia that provides for a more holistic, integrated and sound management of the environment, and natural resources.

Both the Forestry Policy and the Biodiversity Policy and Action Plan significantly provided for the conservation of land cover of the country. The Forestry Policy calls for at least 30 percent of the country to be maintained under forest cover while the Biodiversity Policy and Action Plan provide for 5 percent to be maintained as protected areas. However, inadequate human, technical and other resources have slowed the implementation of these responses.

To address the alarming rate of land degradation/desertification, the Government of The Gambia pursued several strategies including the creation of the Soil and Water Management Unit (SWMU) in 1979, now Land and Irrigation Development Unit (LIDU) under the National Agricultural Development Agency (NADA). The Unit is responsible for soil mapping and land reclamation and conservation and has reclaimed a total of 8,049 ha of land from salinity and restored them to rice production (**Figure 8**).

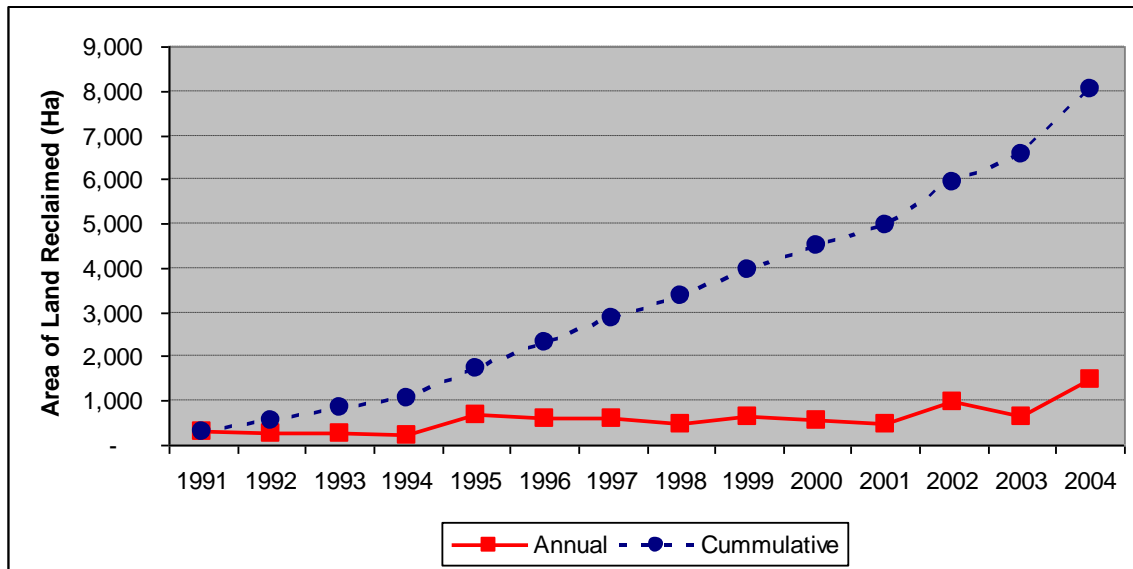


Figure 8. Land Reclaimed between 1991 and 2004 by LIDU

The government has ratified both the Convention on Biological Diversity and the National Biodiversity Strategy and Action Plan (NBSAP), The UN Framework Convention on Climate Change and The UN Convention to Combat Desertification as well as the National Action Plan to combat Desertification (NAP). The Ramsar Convention on the conservation and wise use of wetlands was also ratified.

The National Forest Program (NFP), which provided the framework to address forestry issues within the context of sustainable development, is a tool for planning, implementing and monitoring the forest sector and forestry-related activities. The program emphasized participatory approaches that encourage the involvement of all forest-dependant actors in all aspects of forest management. Pursuant to this, the Department of Forestry introduced The Community Forestry Management Model in some communities in the Western Region of The Gambia.

Government has developed strategies to ensure an integrated and coherent natural resources management in the spirit of promoting cross sectorial policies and activities in support of sustainable development. Such strategies as the comprehensive Agriculture and Natural Resource Policy and Action Plan and the Annual Million Tree Planting Exercise are milestones in combating land degradation and desertification. Government is also encouraging the private sector to invest in the reforestation, afforestation and natural forest management by creating the enabling environment for their participation.

The Organisation pour la Mise en Valeur du fleuve Gambie (OMVG) realizing member countries' total dependence on the forest for energy, has formulated an energy policy which seeks to reduce this dependence with strategies such as capacity building to enable member countries effectively participate in the development of OMVG's hydroelectric power projects and the interconnection of the electric power grids of the sub-region. At the same time, the OMVG aims to help ensure The Gambia's participation in regional/international energy-related initiatives, including the development of the West Africa Power Pool and the West African gas pipeline - a potential alternative source of fuel for the production of electricity.

Recent technology development of short cycle and low input crops such as the NERICAs, strengthening the capacity and the establishment of a National Agricultural Research Institute (NARI), the Department of Agriculture), and others will help address adverse trends in the farming systems. The development and delivery by these institutions of improved practices and/or technologies will reduce the adverse impact of farming systems. The Participatory Integrated Watershed Management (PIWAMP) interventions using dual-purpose bunds/dykes for runoff checks, water retention and introduction of bund stabilization dikes using multipurpose tree species with good root matting are promising as evident in the project sites (NARI 2006).

Agroforestry technologies that provide new opportunity for soil fertility improvement, provision of fuel, live fencing and feed for livestock in the smallholder systems are being promoted both by NARI and the Department of Forestry and presently under wider adaptation in the north bank and western regions through partnership with NGOs.

Pesticide use and abuse is on the rise and is being regulated by NEA through Pesticides and Hazardous Chemicals Act. Household food security is a national concern, and is being addressed through campaigns, such as the FAO-supported Special Program for Food Security and Telefood.

SECTION FOUR

GEF-5 OPERATIONAL PROCEDURES FOR STAR AND FOCAL AREAS PROGRAMS AND PROJECTS

4.1 GEF-5 Operational Procedures for System for Transparent Allocation of Resources (STAR)

The STAR operational procedures include the allocation for each focal area, country qualification for complex flexibility and for scheme of limited flexibility, and preferred GEF Agencies for assisting in project preparation and implementation.

4.1.1 STAR Allocation for Each of Focal Areas

A total of Eight Million US Dollars (US\$8m) has been allocated to The Gambia for GEF-5 Focal Areas. The allocation is made according to the following: Climate Change Mitigation US\$2m; Biological Diversity US\$1.5m; and Land Degradation (Deforestation and Desertification) US\$4.57m.

4.1.2 Country Qualification for Complete Flexibility Using Funds Across Focal Areas and for Scheme of Limited Flexibility

The Gambia does not qualify for flexibility using funds across focal areas but it is qualified to use funds across programs and projects within a focal area.

4.1.3 Preferred GEF Agencies for Assistance in Project Preparation and Implementation

There are many GEF Agencies such as UNEP, UNIDO, UNDP, WB, AfDB, IFAD, FAO, EBRD, IDB, that are involved in providing assistance in project preparation and implementation in The Gambia.

However the preferred GEF Agencies for the GEF-5 Focal Areas are: Climate Change Mitigation: UNEP, UNIDO, and UNDP; Biological Diversity: UNEP and FAO; while for Land Degradation (Deforestation, Desertification): UNEP, FAO, and UNDP.

4.2 Focal Areas Programs and Projects

Environmental issues are trans-boundary in nature and therefore require the adoption of common approaches to address them. The Gambia has been a forerunner in environmental awareness and management and is a party to several regional and international Environmental Agreements, Conventions and Protocols and has manifested its firm commitment to the attainment of their respective goals and objectives.

The Gambia has identified a wide variety of principles and targets, including sector specific goals and measures taken to meet its commitments and attain the desired goals at all levels. To achieve the long-term goals (that aim to protect the environment and ensure

sustainable management of natural resources), several specific operational objectives have been established in relation to:

- i) Plan, manage; assess and monitor;
- ii) Build scientific and technical capacity;
- iii) Create public awareness; national and international collaboration and cooperation;
- iv) Enforce legal, policy and administrative measures;
- v) Enhance local knowledge and practices and co-management; and
- vi) Build synergies between related Conventions and Treaties.

The Gambia lacks financial and technical capacities to effectively monitor and ensure effective enforcement and promote compliance. The enforcement of and compliance with MEAs need better interagency coordination at national and international levels. Joint implementation of the national obligations under different MEAs ensures that the use of scarce resources is optimised and synergies among the relevant conventions are harmonised at national and international levels.

4.2.1 CLIMATE CHANGE (STAR: US\$2M)

Development of GEF-5 strategy in the climate change focal area for The Gambia is drawn on past experience and guided by three principles:

- (i) Responsiveness to Convention guidance;
- (ii) Consideration of different national circumstances; and
- (iii) Cost-effectiveness in achieving global environmental benefits.

GEF-5 will endeavour to make a transformative impact in helping The Gambia move to a low-carbon development path through market transformation of, and investment in, environmentally sound, climate-friendly technologies. The GEF-5 climate change strategy promotes a broad portfolio of environmentally sound, climate friendly technologies to achieve large GHG reductions.

The overall goal of the GEF in climate change mitigation is to develop The Gambia using a low-carbon development path. The long-term impact of the GEF work will be slower growth in GHG emissions to the atmosphere from The Gambia and contribution to the ultimate objective of the UNFCCC, which is to achieve “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.” The climate change mitigation strategy for GEF-5 consist of six objectives:

- (i) Promote the demonstration, deployment, and transfer of innovative low-carbon technologies;
- (ii) Promote market transformation for energy efficiency in industry and building sector;
- (iii) Promote investment in renewable energy technologies
- (iv) Promote energy efficient, low-carbon transport and urban systems;

- (v) Promote conservation and enhancement of carbon stocks through sustainable management of land use, land-use change and forestry;
- (vi) Support enabling activities and capacity building.

4.2.1.1 National and Regional Level Program Approach

A total of four (4) programs and eight (8) projects under Climate Change Mitigation are being considered as part of the GEF-5 Focal Areas Strategies for future funding.

PROGRAM 1: MITIGATE THE IMPACT OF CLIMATE CHANGE ON THE SOCIO- ECONOMIC SECTORS OF THE GAMBIA (US\$0.5 m)

Program Justification and Goal

Climate change constitutes one of the greatest burdens to national development efforts, poverty alleviation, achievement of the Millennium Development Goals (MDGs) because the productive base of the economy thrives on climate-sensitive activities such as crop production, livestock rearing, fisheries, energy, water resources, etc. However, little or no research has been undertaken in The Gambia on the linkages between climate and biophysical processes.

The goal of the program is to reduce the adverse effects of climate change on some socio-economic sectors of The Gambia.

Project 1: Monitor the Coastal Zone of The Gambia

Project Objective(s):

To understand coastal dynamics in order to better manage the coastal zone;
To put in place a coastal area disaster management plan.

Project Activities:

The proposed project activities include: i) provision of monitoring equipment; ii) Data collection, analysis, and reporting (Database); iii) Training of Stakeholders; iv) Develop a disaster management plan; v) sensitize and create awareness of coastal dynamics.

Target Area: Coastal Area (81km along the Atlantic Ocean)
Participating Institutions: DWR (Lead Institution),NEA, Coastal Communities, Geology, GTA, NDMA etc.
Duration: 4 years
Estimated Cost: US\$0.25m
Impact:

Communities are informed on coastal issues; state of preparedness for disasters enhanced; and management of coastal zone improved for the social and economic wellbeing of stakeholders.

Project 2: Adaptive Research on Linkages between Climate Change and Biophysical Processes of Agriculture, Forestry, Health, Fisheries, and Water Resources

Project Objective(s):

To determine the linkages between Climate Change and Biophysical Processes through Adaptive Research.

Project Activities:

The proposed project activities include: i) Problem identification; ii) Identification of relevant technologies; iii) Pilot the technologies; iv) Scale up technologies.

Target Area: Country- wide Exercise

Participating Institutions: DoA, DWR, DoH, DoF, DoFish (Lead Institutions), NARI, Councils, NEA.

Duration: 4 years

Estimated Cost: US\$0.25m

Impact:

Improved livelihood of the communities and the general economy of The Gambia.

PROGRAM 2: MITIGATE GREEN HOUSE GAS (GHG) EMISSIONS AND WASTE GENERATION (US\$0.5m)

Program Justification and Goal

Previous uncertainties on the role of greenhouse gases on the observed changes in the climate system have now been verified, IPCC (2007a) explicitly states that “*most of the observed increase in global average temperatures since the mid-20th century is very likely² due to the observed increase in anthropogenic greenhouse gas concentrations*”.

Motor vehicles are recognised as the major contributor to urban air pollution; their emissions of suspended particulate matter such as carbon monoxide, nitrogen oxide and unburned hydrocarbon are on the increase in The Gambia.

The goal of the program is to reduce GHG emissions and enhance Waste Management

Project 1: Strengthen the Enforcement of Legislations Relating to GHG Emissions

² Assessed likelihood greater than 90%

Project Objective(s):

To ensure reduction of GHG emissions.
To improve environmental quality.
To sensitize and create awareness of communities on GHG emissions reduction.

Project Activities:

The proposed activities are: i) training of enforcement personnel; ii) sensitisation/awareness creation; iii) decentralisation of environmental laws; iv) regular monitoring and evaluation; v) validation and enactment of Waste Bill.

Target Area: Countrywide Exercise
Participating Institutions: NEA (lead Institution) Councils, DOH, Judiciary, DPPH, DOA, Security Forces, The Media.
Duration: 4 years
Estimated Cost: US\$0.25m
Impact:

Improved environmental quality.

Project 2: Piloting Solid Waste Management (Reuse, Reduce, Recycle)

Project Objective(s):

To enhance national waste management through re-use, re-cycle, and reduce waste.

Project Activities:

The proposed activities include: i) waste segregation at source; ii) composting of biodegradable matter; iii) recycling of certain items from the waste stream; iv) reusing some waste; v) promote private sector participation in waste management; vi) sensitisation and awareness programs for stakeholders including schools; vii) identify and manage designated waste dumpsites.

Target Area: Countrywide Exercise
Participating Institutions: NEA (lead Institution), Councils, DOH, DPPH, DOA, the Media.
Duration: 4 years
Estimated Cost: US\$0.25m
Impact:

Clean and healthy environment that enhance economic and social wellbeing of Gambians.

PROGRAM 3: IMPROVE ACCESS TO ALTERNATE SOURCES OF DOMESTIC ENERGY (Cost: US\$0.5m)

Program Justification and Goal:

In the energy sector, fuel wood obtained from biomass represents over 80% of the total primary needs of the country (NAPA, 2007). A more erratic rainfall pattern coupled with increasing temperatures is expected to reduce the potential for biomass energy production as well as for hydroelectric power generation.

The goal of the program is to improve access to alternative, affordable and environmentally friendly energy-saving devices.

Project 1: Promote the Use of Energy Saving Devices

Project Objective(s):

To reduce dependency on non-energy saving devices.

Project Activities:

The proposed project activities include: i) identification of prototype energy-saving devices; ii) demonstrate use of devices; iii) train blacksmiths, potters, and community on the manufacture and use of devices; iv) market devices.

<u>Target Area:</u>	Countrywide exercise
<u>Participating Institutions</u>	DCD (lead Institution), MOE, DOF, NEA, PURA, REAGAM.
<u>Duration:</u>	4 years
<u>Estimated Cost:</u>	US\$0.25m
<u>Impact:</u>	

Reduced GHG emissions create a clean environment, save forest resources for the future generation and create employment.

Project 2: Promote Affordable Solar Powered Devices for Multipurpose Use

Project Objective(s):

To reduce GHG emissions.

Project Activities:

The proposed project activities include: i) identification of the technologies; ii) demonstration of the viability of the technologies; iii) marketing technologies.

Target Area: Countrywide Exercise
Participating Institutions: MoE (Lead Institution), REAGAM, PURA, NAWEC, NEA.
Duration: 4 years
Estimated Cost: US\$0.25m
Impact:

The access to solar energy is improved and livelihoods of people will be improved through savings and income generation.

PROGRAM 4: PHASE OUT REFRIGERANTS WITH GLOBAL WARMING POTENTIALS (Cost: US\$0.5m)

Program Justification and Goal

The Gambia neither produces nor exports ODSs. The Country imports all of CFC-11, CFC-12, CFC-115 and HCFC -22 for servicing refrigeration and air conditioning equipment and manufacturing of foam. The CFC-115 is imported as part of a refrigerant mixture called R-502. Small amounts (less than 10 litres) of methyl chloroform were stored in selected school laboratories. The only data on methyl bromide import was recorded in 1994.

The use of controlled cleaning solvents is insignificant. Also, imports of halons have been small with the last import in 1991. The principal source country of all ODS imported into the Gambia is the United Kingdom. However, this has been gradually replaced by the emerging Asian markets particularly China. The Gambia consumed 30.5 tonnes of ODS in 1994, which gives a per capita consumption of 0.030 kg (ODS CP, 1997).

The goal of the program is to maintain compliance with the control measures established by relevant international treaties on the protection of the ozone layer.

Project 1: Develop Ozone Policy and Strategy

Project Objective(s)

To develop and enhance the implementation of control measures for elimination of ozone depleting substances (ODS).

Project Activities:

The proposed project activities include: i) hire consultant services; ii) validate policy and strategy; iii) implement recommendations

Target Area: Countrywide Exercise
Participating Institutions: NEA (lead Institution), Private Sector, technicians, GRA, MOH, MOA, DOF.
Duration: 4 years
Estimated Cost: US\$0.25m
Impact:

Reduced emission of refrigerants into the atmosphere, less occurrence of disease resulting from ultra violet lights.

Project 2: Institutional Strengthening

Project Objective(s)

To phase out refrigerants with GWP by 2030;
To replace refrigerants of GWP with more environmentally friendly refrigerants (natural refrigerants).

Project Activities:

The activities include: i) provision of tools and equipment for removing and retrofitting; ii) training of stakeholders; iii) data collection, analysis and reporting; iv) sensitisation and awareness creation; v) M&E.

Target Area: Countrywide Exercise
Participating Institutions: NEA (lead Institution), Private Sector, Technicians, GRA, MOH, MOA, DOF.
Duration: 4 years
Estimated Cost: US\$0.25m
Impact:

Reduced destruction of the Ozone Layer and occurrences of diseases-causing rays, which improves the health of human beings.

4.2.1.2 Programs and Projects contribution to Fulfilment of Obligations to the UNFCC

Expected national socio-economic benefits:

- i) Sustained livelihoods for people dependent on the use and management of natural resources (land, water, forests and biodiversity);
- ii) Reduced vulnerability to impacts of CC of people dependent on the use and management of natural resources in agricultural and forest ecosystems.

Agreed global environmental benefits:

- i) Improved provision of agro-ecosystem and forest ecosystem goods and services;
- ii) Reduced GHG emissions from agriculture, deforestation and forest degradation and increased carbon sequestration;
- iii) Reduced vulnerability of agro-ecosystem and forest ecosystems to climate change and other human-induced impacts.

These benefits are consistent with the GEF Instrument and contribute to the achievement of Millennium Development Goals 1 Eradicate extreme poverty and hunger, and 7 Ensure environmental sustainability, specifically target 7a: Integrate the principles of sustainable development into country policies and programs; reverse loss of environmental resources and target 7b: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.

4.2.2 BIODIVERSITY (STAR: US\$1.5M)

The GEF-5 strategy will maintain coherence with the GEF-4 strategy while proposing refinements to the strategy's objectives based on COP-9 guidance, advances in conservation practice, and advice from the GEF's Scientific and Technical Advisory Panel. The ninth meeting of the Conference of the Parties of the Convention on Biological Diversity (CBD) acknowledged that the GEF-4 strategy served as a useful starting point for the GEF-5 strategy and requested GEF to build on it for the fifth replenishment based on the four year framework of program priorities developed by COP-95. The goal of the biodiversity focal area is the conservation and sustainable use of biodiversity and the maintenance of ecosystem goods and services. To achieve this goal, the strategy encompasses five objectives:

- i) Improve the sustainability of protected area systems;
- ii) Mainstream biodiversity conservation and sustainable use into production landscapes/seascapes and sectors;
- iii) build capacity to implement the Cartagena Protocol on Biosafety;
- iv) build capacity on access to genetic resources and benefit-sharing; and
- v) integrate CBD obligations into national planning processes through enabling activities.

4.2.2.1 National Level Program Approach

A total of four (4) programs and fifteen (15) projects under the Convention on Biological Diversity are being considered as part of the GEF5 Focal Areas Strategies for future funding.

PROGRAM 1: SPECIES (FLORA, FAUNA) INVENTORY (US\$0.1m)

Program Justification and Goal:

The current situation of biodiversity goods, services and products in the Gambia indicates that the resources are declining and the situation is likely to worsen, unless appropriate regulatory and management measures are undertaken.

The goal of the program is to effectively and sustainably manage biodiversity in The Gambia.

Project(s):

- 1.1.1 Carry out Inventory of Terrestrial Species.
- 1.1.2 Carry out Inventory of Aquatic Species.

Project Objective(s):

To determine the populations and as well as nationally threatened and endangered terrestrial and aquatic species.

Project Activities:

The following project activities are being proposed: i) Training of personnel/numerators; ii) Public sensitization and awareness; iii) Hire of consultant(s); iv) Provision of relevant field equipment for the exercise; v) Provision of mobility; vi) Conduct data collection; vii) Conduct data analysis; viii) Prepare report.

<u>Target Area:</u>	Country-wide exercise
<u>Participating Institutions:</u>	DPWM (Lead Institution), DoF, DoFis, NEA, WABSA, CBOs, NGOs, Local Authorities.
<u>Duration:</u>	1 year
<u>Estimated cost:</u>	US\$0.05m

Impact:

The main impact is enhanced sustainable management of species and improved livelihood of the local communities.

PROGRAM 2: STUDY PARTNERSHIP MANAGEMENT OPTIONS FOR PROTECTED AREAS (US\$0.2m)

Program Justification and Goal:

There has been increasing population pressure on biodiversity resources and habitats and government is finding it difficult to effectively manage Gambia's protected areas.

Government policy has shifted towards public-private –partnership in the management of protected areas.

The program goal is to enhance effective and sustainable management of protected areas.

Project 1: Support the Trans-formation Process of DPWM to Gambia Wildlife Authority (US\$0.1m).

Project Objectives, Activities, Targets etc:

These will be determined later on as the arrangements of the transformation process are being finalized.

Project 2: Study Management Options for Different Protected Areas.

Project Objective(s):

To determine suitable management options for Protected Areas.
To encourage public-private partnership in the management of protected areas.

Proposed Activities:

The following activities will be carried out: i) Carry out public sensitization and awareness ; ii) Hire Consultant Services; iii) Validate Study Report; iv) Implement recommendations.

<u>Target Area:</u>	Protected Areas
<u>Participating Institutions:</u>	DPWM (Lead Institution), NEA, DoF, DCD, GTA, DOA, NGOs, CBOs, Local Authorities.
<u>Duration:</u>	2years
<u>Estimated Cost:</u>	US\$0.1m

Impact:

The main impact is sustaining biological diversity for economic and social wellbeing of Gambians and the international community.

PROGRAM 3. CONSERVATION AND SUSTAINABLE USE OF COUNTRY’S BIOLOGICAL DIVERSITY (US\$0.8m)

3.1 Program Justification and Goal:

The current rate of loss of forest cover, declining fish stocks and sizes, decreasing wild fauna and floral diversity, increased by-catch of marine mammals with resultant poverty, extinction, and habitat degradation need to be reviewed and their management improved.

The goal of the program is to maintain and sustainably utilize the biological resources for current and future generations of Gambians.

Project 1: Study Potential Sites for Establishment of Bird Sanctuaries

Project Objectives:

To identify suitable sites for the setting up of bird sanctuaries.
To develop management plans for the sites.
To protect and preserve the bird species of The Gambia.

Project Activities:

The following project activities are being proposed: i) Hire Consulting Services; ii) Conduct the study; iii) validate the study report; iv) implement the recommendations.

Target Area: Countrywide
Participating Institutions: DPWM (Lead Institution), DoF, NEA, DoFis, GTA, DoH, DCD, Local authorities, NGOs, CBOs, NARI.
Duration: 4yrs
Estimate cost: US\$0.1m
Impact:

The main impacts include restoring and sustaining biological diversity in bird species for economic and social wellbeing of Gambians and the international community.

Project 2: Study Potential Sites for Establishment of Botanical Gardens (Rare and Medicinal Plants).

Project Objective(s) :

To identify suitable sites for the setting up of Botanical Gardens.
To develop management plans for the sites.
To protect the flora species of The Gambia.

Project Activities:

The following project activities are being proposed: i) Hire Consulting Services; ii) Conduct the study; iii) validate the study report; iv) implement the recommendations.

Target Area: Countrywide
Participating Institutions: DPWM (Lead Institution), DoF, NEA, DoFis, GTA, DoH, DCD, Local authorities, NGOs, CBOs, NARI.
Duration: 4 years
Estimated Cost: US\$0.1m
Impact:

The main impact is restoring and sustaining biological diversity in plant species for economic and social wellbeing of Gambians and the international community.

Project 3: Study Potential Sites for Establishment of Ecotourism.

Project Objective(s):

To identify a suitable sites for the setting up of Eco-Tourism.
To develop and implement management plans for the Eco-tourism sites.
To alleviate poverty in peri-urban and rural Gambia.

Project Activities:

The following project activities are being proposed: i) Hire Consulting Services; ii) Conduct the study; iii) validate the study report; iv) implement the recommendations.

Target Area: Countrywide
Participating Institutions: DPWM (Lead Institution), DoF, NEA, DoFis, GTA, DoH, DCD, Local authorities, NGOs, CBOs, NARI.
Duration: 4 years
Estimated Cost: US\$0.1m
Impact:

The main impact is to increase economic and social wellbeing of Gambians and the international community.

Project 4: Restocking of Gazetted Forest Areas.

Project Objective(s):

To increase the number of selected threatened, endangered, and extinct fauna species in Gazetted Forest Parks.

Project Activities:

The following activities will be carried out: i) Fence Gazetted Forest Parks; ii) Sensitization and Awareness Creation; iii) Train stakeholders and personnel; iv) identify, select, and import suitable fauna species; v) observe and fauna species prior to release; vi) gradually release fauna in the Forest Parks; vii) monitor progress of fauna species.

Target Area: Forest Parks in all the regions of the country.
Participating Institutions: DPWM (Lead Institution), DoF, NEA, DoFis, GTA, DoH, DCD, Local authorities, NGOs, CBOs, NARI.
Duration: 4 years
Estimated Cost: US\$0.1m

Impact:

Increased biological diversity will improve the economic and social wellbeing of Gambians and the international community.

Project 5: Pilot Wildlife and Other Sectors Conflict Resolution Methods.

Project Objectives:

To reduce the frequency of wildlife/livestock and human conflicts.

Project Activities:

The following activities are being proposed: i) Land-use mapping; ii) Baseline survey on the causes of conflict; iii) Mitigation measures e.g. sensitization and awareness creation, digging of trenches.

<u>Target Area:</u>	Countrywide
<u>Participating Institutions:</u>	DPWM (Lead Institution), DoF, NEA, DoFis, GTA, DoH, DCD, Local authorities, NGOs, CBOs, NARI.
<u>Duration:</u>	4 years
<u>Estimated Cost:</u>	US\$0.1m
<u>Impact:</u>	

Reduced wildlife human conflict creates harmony and increases better understanding of the need for mutual survival.

Project 6: Study Indigenous Knowledge Systems (IKS) on Conservation and Management of Biodiversity Resources.

Project Objective(s):

To use and encourage indigenous knowledge systems and sharing in the conservation and management of biological diversity resources.

Project Activities:

The following activities are being proposed: i) Identify the IKS; ii) Establishment of databank for traditional healers and materials, ii) Sensitization and create awareness on traditional knowledge and information sharing.

<u>Target Area:</u>	Countrywide
<u>Participating Institutions:</u>	DPWM (Lead Institution), DoF, NEA, DoFis, GTA, DoH, DCD, Local authorities, NGOs, CBOs, NARI.
<u>Duration:</u>	4 years
<u>Estimated Cost:</u>	US\$0.1m

Impact:

Increased biological diversity will improve the economic and social wellbeing of Gambians and the international community.

Project 7: **Preserving and Enriching the Tree Biodiversity of Traditional Agro-Forestry Parkland System.**

Project Objective(s):

To promote the regeneration and conservation of Gambia tree biodiversity.

To improve livelihoods of rural poor farmers.

Project Activities:

The proposed project activities include: i) analyse and document at the farm –and landscapes- levels indigenous ecological farmers’ knowledge; ii) identify and quantify above-ground agroforestry biodiversity of traditional parklands agroforestry systems; iii) develop and implement a wide range of participatory management and enrichment options at farm- and community-levels; iv) assess adoption of options according to socio-economic status and evaluate socio-economic and environmental impacts; v) catalyse broader dissemination of management and enrichment options of parklands systems.

Target Area:

Country-wide

Participating Institutions:

NARI, (Lead Institution), DPWM, DoF, NEA, DoFis, GTA, DoH, DCD, Local authorities, NGOs, CBOs, NARI.

Duration:

4 years

Estimated Cost:

US\$0.1m

Impact:

The social and economic benefits and livelihoods of communities will be improved.

Project 8: **Promote the Survival and Protection of Threatened and Endangered Fish Species.**

Project Objective(s):

Enhance regeneration of threatened fish species through aquaculture.

Project Activities:

The proposed project activities are: i) identify the threatened and endangered fish species; ii) select survival and protected sites and facilities; iii) stock sites with species; iii) scale up sites for species.

Target Area:

Countrywide

Participating Institutions:

DoFis and DPWM (Lead Institution), NEA, DoF, GTA,

Duration: DoH, DCD, Local authorities, NGOs, CBOs, NARI.
4 years
Estimated Cost: US\$0.1m
Impact:

Increased biological diversity will improve the economic and social wellbeing of Gambians and the international community.

**PROGRAM 4: REGIONAL/INTERNATIONAL LEVEL COLLABORATION
PROGRAMME APPROACH (US\$0.4m)**

Program Justification and Goal:

The current situation of biodiversity goods, services and products in the Sene- Gambia region indicates that the resources are declining and the situation is likely to worsen, unless appropriate regulatory and management measures are undertaken.

The goal of the program is to effectively and sustainably manage biodiversity in the Sene-Gambia region.

Project 1: Carryout Inventory of Trans-boundary Terrestrial Species

Project Objective(s):

To improve the management of trans-boundary terrestrial species.

Project Activities:

The following activities are being proposed: i) hire of consultant(s), ii) training of personnel/numerators; iii) public sensitization and awareness; iv) conduct study; iv) validate study, v) implement recommendations.

Target Area: Regional (Gambia and Senegal)
Participating Institutions: DPWM, NEA, DoF, DoFis, PNDS, DCD, DOA, NGOs, CBOs.
Duration: 1 year
Estimated Cost: US\$0.2m
Impact:

The main impact is enhanced sustainable management of species and improved livelihood of the Sene-Gambia communities.

Project 2: Carryout Inventory of Trans-boundary Aquatic Species

To improve the management of trans-boundary aquatic species.

Project Activities:

The following activities are being proposed: i) hire of consultant(s), ii) training of personnel/numerators; iii) public sensitization and awareness; iv) conduct study; v) validate study, vi) implement recommendations.

Target Area: Regional (Gambia and Senegal)
Participating Institutions: DPWM, NEA, DoF, DoFis, PNDS, DCD, DOA, NGOs, CBOs.
Duration: 1 year
Estimated Cost: US\$0.2m
Impact:

The main impact is enhanced sustainable management of aquatic species and improved livelihood of the local communities.

Project 3: Study Potential Sites for Establishment of Trans-boundary Bird Sanctuaries.

Project Objective(s):

To identify suitable sites for the setting up of bird sanctuaries.
To develop management plans for the sites.
To protect and preserve the bird species of the Sene-Gambia region.

Project Activities:

The following project activities are being proposed: i) Hire Consulting Services; ii) Conduct the study; iii) validate the study report; iv) implement the recommendations.

Target Areas: Regional (Gambia and Senegal)
Participating Institutions: DPWM, NEA, DoF, DoFis, PNDS, DCD, DOA, NGOs, CBOs.
Duration: 1 year
Estimated Cost: US\$0.2m
Impact:

The main impact is enhanced sustainable management of bird species and improved livelihood of the local communities.

4.2.2.3 Projects Contribution to Fulfilment of Obligations to the CBD

Expected national socio-economic benefits:

- iii) Sustained livelihoods for people dependent on the use and management of biodiversity resources (fauna and flora);
- iv) Reduced vulnerability to impacts of people dependent on the use and management of natural resources in agricultural and forest ecosystems.

Agreed global environmental benefits:

- iv) Improved provision of agro-ecosystem and forest ecosystem goods and services;
- v) Reduced destruction of biodiversity from poor agricultural practices, deforestation and forest degradation;
- vi) Reduced vulnerability of agro-ecosystem and forest ecosystems to human-induced impacts.

These benefits are consistent with the GEF Instrument and contribute to the achievement of Millennium Development Goals 1 Eradicate extreme poverty and hunger, and 7 Ensure environmental sustainability, specifically target 7a: Integrate the principles of sustainable development into country policies and programs; reverse loss of environmental resources and target 7b: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.

4.2.3 LAND DEGRADATION (DESERTIFICATION AND DEFORESTATION: STAR: US\$4.57M)

The goal of the land degradation focal area is to contribute to arresting and reversing current national trends in land degradation, specifically desertification and deforestation. This will be accomplished by promoting and supporting effective policies, legal regulatory frameworks, capable institutions, knowledge sharing and monitoring mechanisms, together with good practices conducive to sustainable land management (SLM) and that are able to generate global environmental benefits while supporting local and national, social and economic development. Therefore, the LD strategy will promote system-wide change necessary to control the increasing severity and extent of land degradation. Investing in sustainable land management (SLM) to control and prevent land degradation in the wider landscape is an essential and cost-effective way to deliver multiple global environmental benefits related to ecosystem functions. Four objectives will contribute to the focal area goal and drive the development of the GEF-5 portfolio:

- i) Maintain or improve flows of agro-ecosystem services to sustain the livelihoods of local communities;
- ii) Generate sustainable flows of forest ecosystem services in arid, semi-arid and sub-humid zones, including sustaining livelihoods of forest-dependent people;

- iii) Reduce pressures on natural resources from competing land uses in the wider landscape; and
- iv) Increase capacity to apply adaptive management tools in SLM.

4.2.3.1 National Level Program Approach (Desertification and Deforestation: STAR: US\$4.57m)

A total of four (4) programs and thirteen (12) projects under Land Degradation (desertification, deforestation) are being considered as part of the GEF5 Focal Areas Strategies for future funding.

PROGRAM 1: INTEGRATED LAND AND WATER MANAGEMENT (US\$1.57m)

Programme Justification and Goal:

The present state of The Gambian soils indicates a high degree of degradation resulting from a combination of human and climatic factors. The rate of desertification was estimated at 7% (Sillah, 2002). Soil erosion by both water and wind is quite widespread throughout the country. The eroded soil material is usually deposited in the lowlands further compounding the problem of land degradation. An acidity problem is also widespread due mainly to reduced rainfall and shortening of the fallow period.

The goal of the program is to address land degradation through sustainable land and water management practices.

Project 1: Watershed Ecology Management

Project Objective(s):

- To promote Conservation farming.
- To enhance soil Organic Matter for increased crop production.
- To increase land productivity.

Project Activities:

The following project activities are being proposed: i) identify watershed ecologies; ii) construct dykes; ii) practice contour farming; iii) Plant farm boundaries with plant/wind breaks etc.

<u>Target Area:</u>	Countrywide
<u>Participating Institutions:</u>	DoA, (Lead) DoF, NARI,NGOs CSOs, NEA etc.
<u>Duration:</u>	4 years
<u>Estimated Cost:</u>	US\$1m

Impact:

Social and economic wellbeing of Gambian communities will be enhanced.

Project 2: Adaptive Research on Management of On-Farm Crop Residues.

Project Objective(s):

To promote Conservation tillage and farming.
To enhance soil organic matter for increased crop production.
To increase land productivity.

Project Activities:

The following project activities are being proposed: i) sensitize and create awareness; ii) identify and select suitable farms; iii) practice/demonstrate technology; iv) promote technology.

Target Area: Countrywide
Participating Institutions: DoA, (Lead) DoF, NARI, NGOs CSOs, NEA etc.
Duration: 4 years
Estimated Cost: US\$0.57m
Impact:

The farmland productivity contributes to economic and social wellbeing of farming communities.

PROGRAM 2: NATURAL RESOURCES MANAGEMENT (\$1.75 million)

Programme Justification and Goal:

The land is under severe pressure mainly from high growth of human and livestock population, lack of effective forest production and management system, uncontrolled bush fire and cutting of firewood, overgrazing and unplanned encroachment of cropping and human settlements (Ludwig and Bojang, 1998).

The goal of the program is to protect, enhance and restore the natural resources through sustainable development and management systems that would improve quality of life through sound land management and environmental governance.

Project 1: Promote Community Forestry Management.

Project Objective(s):

To enhance stakeholder ownership of protected areas.

Project Activities:

The proposed project activities include: i) Sensitize communities; ii) identification and demarcation of 200,000 ha of total forest areas; iii) set a management committee & develop a management plan; iv) implement the management plan; v) monitor progress.

Target Area: Countrywide
Participating Institutions: DoF (Lead), Regional Governors’ Offices, CSO, NGO, NEA, DPPH, DLS, NARI, NATC, DOFISH DPWLM, DCD.
Duration: 4 years
Estimated Cost: US\$1.57m
Impact:

The involvement of communities in the management of forests ensures security of tenure and sustainable management for economic and social wellbeing of the communities.

Project 2: Promote Public-Private Partnership in the Management of Protected Areas

Project Objective(s):

To maintain 30% of the total land area under forest cover for sustainable development.

Project Activities:

The proposed project activities include: i) sensitization; ii) training; iii) Identify and demarcate areas; iv) Set a management committee and develop a management plan; v) Implement the management plan.

Target Area: Country wide
Participating Institutions: DoF, DoA (Lead Institutions), Regional Governors’ Offices, CSO, NGO, NEA, DPPH, DLS, NARI, NATC, DOFISH DPWLM DCD.
Duration: 4 years
Estimated Cost: US\$ 1.75m
Impact:

The sustainable management of Protected Areas will ensure economic and social wellbeing of Gambians.

Project 3: Pilot Agro-Forestry Systems

Project Objective(s):

To harness the full benefit and income from multipurpose tree and shrub species in diverse land use systems.

Project Activities:

The following activities are being proposed: i) identify the suitable agro-forestry technology; ii) sensitize and create community awareness; iii) select sites; iv) implement the technologies; v) prepare findings and recommendations; vi) scale up agro-forestry systems.

Target Area: Country-wide
Participating Institutions: NARI (Lead Institution), DoF, Regional Governors' Offices, CSO, NGO, NEA, DPPH, DLS, NARI, NATC, DOFISH DPWLM, DCD.
Duration: 4 years
Estimated Cost: US\$ 1.75m
Impact:

Improved land use for economic and social wellbeing of communities and Gambians as a whole.

Project 4: **Plantation Establishment and Management in Degraded Lands (woodlots, palm oil, cashew etc.)**

Project Objective(s):

To enhance income generation and improved livelihood.

Project Activities:

The activities envisaged for this project are: i) sensitize and create awareness and set up management committees; ii) identify the degraded land areas and suitable tree crops; iii) protect the areas and plan tree crops; iv) monitor progress;

Target Area: Selected Degraded Land Areas Throughout The Gambia
Participating Institutions: DOA (Lead), Regional Governors' Offices, CSO, NGO, NEA, DPPH, DLS, NARI, NATC, DOFISH DPWLM DCD.
Duration: 4 years
Estimated Cost: US\$ 1.75m
Impact:

Improved land use for economic and social wellbeing of communities and Gambians as a whole.

Project 5: **Rehabilitation of Mangrove Systems**

Project Objective(s):

To realize mangrove ecosystem production potential in fish, oyster and other domestic gains.

Project Activities:

Envisaged activities include: i) identify mangrove systems to be rehabilitated; ii) develop a rehabilitation plan; iii) implement the plan; iv) monitor progress.

Target Area: Mangrove ecologies of the country.
Participating Institutions: DoF (Lead), DoA, Regional Governors’ Offices, CSO, NGO, NEA, DPPH, DLS, NARI, NATC, DOFISH, DPWLM, DCD.
Duration: 4 years
Estimated Cost: US\$ 1.75m
Impact:

The sale of fish and oyster will improve their homes and social wellbeing of Gambians.

Project 6: Strengthen Bush Fire Prevention and Management Measures

Project Objective(s):

To ensure that natural resources are sustainably maintained for the current and future generations.

Project Activities:

The following activities are being proposed: i) sensitize and create awareness; ii) develop and launch a strategic bush fire prevention and management campaign; iii) implement the prevention and management measures; iv) monitor progress.

Target Area: Countrywide.
Participating Institutions: DoF (Lead), DoA, Regional Governors’ Offices, CSO, NGO, NEA, DPPH, DLS, NARI, NATC, DOFISH DPWLM DCD.
Duration: 4 years
Estimated Cost: US\$ 1.75m
Impact:

The economic and social wellbeing of communities and Gambians are enhanced.

PROGRAM 3: LAND RESOURCES SURVEY (US\$ 1.0 m)

Program Justification and Goal:

The land is under severe pressure mainly from high growth of human and livestock population, lack of effective forest production and management system, uncontrolled bush fire and cutting of firewood, overgrazing and unplanned encroachment of cropping and human settlements (Ludwig and Bojang, 1998).

The goal of the program is to determine the natural resource endowment of the country for effective management purposes.

Project 1: Soil Survey

Project Objective(s):

To determine the soil type, topography and fertility level to support socio-economic activities.

Project Activities:

The following activities are being proposed: (i) conducted soil study (ii) Develop site specific maps (iii) Demarcate land (iv) Develop land maps.

<u>Target Area:</u>	Countrywide
<u>Participating Institutions:</u>	DoA (Lead), NFPlatform, NEA, and NARI.
<u>Duration:</u>	4 years
<u>Estimated Cost:</u>	US\$ 1m
<u>Impact:</u>	

The proper management of the soil will ensure economic development and social wellbeing of Gambians.

Project 2: Land Use Planning

Project Objective(s):

To demarcate land on the basis of its potential usage.

Project Activities:

The proposed project activities are: i) survey areas; ii) develop land use maps; iii) demarcate areas; iv) implement land use plan.

<u>Target Area:</u>	Country-wide
<u>Participating Institutions:</u>	DoA (Lead), NFPlatform, NEA (project 1).
<u>Duration:</u>	4 years
<u>Estimated Cost:</u>	US\$ 1m

Impact:

Land capability would ensure sustainable use of the land for economic and social wellbeing of Gambians.

Project 3: Forest Assessment

Project Objective(s):

To determine different type of forests, tree species, and their distribution.

Project Activities:

The proposed activities are : i) identify consulting services; ii) conduct assessment; iii) validate report; iv) implement recommendations.

Target Areas: Countrywide

Participating Institutions: NEA and DoF (Lead Institutions), DPPH, DoA, Regional Governors' Offices, CSOs.

Duration: 4 years

Estimated Cost: US\$1m

Impact:

Social and economic well being of Gambians.

**PROGRAM 4: REGIONAL/INTERNATIONAL COLLABORATION
PROGRAMME APPROACH (\$ 0.25million)**

Program Justification and Goal:

The management of trans-boundary natural resources through the prevention of bushfires, reduction of mangrove dieback, and increase in water flow will be greatly enhanced with regional collaboration with Senegal.

The goal of the program is to harmonize environmental policies, legal and institutional framework to enhance sustainable management of shared trans-boundary natural resources.

Project 1: Trans-boundary Natural Resource Management (Bush fires, Mangrove die-back, Water flow etc)

Project Objective:

To promote joint studies and programming of interventions in natural resources management.

Project Activities:

The following activities are proposed: (i) Tran boundary agreement on bush fire management plan (ii) Comprehensive study on mangrove die back (iii) Assessment of water bodies invasive aquatic weed invasion, water quality and flow.

<u>Target Area:</u>	Identified Trans-Boundary Hot Spots
<u>Participating Institutions:</u>	NEA, Dofish, NARI, DoA, DWR, DoF and sub regional partners (Senegal, Guinea Bissau etc).
<u>Duration:</u>	4 years
<u>Estimated Cost:</u>	US\$0.25m
<u>Impact:</u>	

The effective management of trans-boundary natural resources will enhance regional socio-economic development.

4.2.3.2 Programs and Projects Contribution to Fulfilment of Obligations to the UNCCD

Expected national socio-economic benefits:

- i) Sustained livelihoods for people dependent on the use and management of natural resources (land, water, forests and biodiversity);
- ii) Reduced vulnerability to impacts of desertification and deforestation on people dependent on the use and management of natural resources in agricultural and forest ecosystems.

Agreed global environmental benefits:

- iii) Improved provision of agro-ecosystem and forest ecosystem goods and services;
- vii) Reduced desertification from poor agricultural practices, deforestation and forest degradation;
- viii) Reduced vulnerability of agro-ecosystem and forest ecosystems to human induced impacts.

These benefits are consistent with the GEF Instrument and contribute to the achievement of Millennium Development Goals 1 Eradicate extreme poverty and hunger, and 7 Ensure environmental sustainability, specifically target 7a: Integrate the principles of sustainable development into country policies and programs; reverse loss of environmental resources and target 7b: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.

Under the GEF-5 Focal Areas of A total of twelve (12) programs and thirty-four (34) projects are envisaged to be implemented (**Table 10**).

The GEF-5 STAR of US\$8.07m will be utilized during the implementation of the programs under each of the focal areas: Climate Change Mitigation; Biological Diversity; and, Land Degradation (Deforestation, Desertification) with support from four main preferred GEF Agencies, UNEP, UNIDO, UNDP, and FAO.

Table 10: GEF-5 Focal Areas Information Summary

GEF-5 Focal Area	STAR (US\$m)	No. Programs	No. Projects	Preferred GEF Agencies	Remarks
Climate Change (Mitigation)	2	4	8	UNIDO, UNEP, UNDP	DWR and NEA (Lead Institutions)
Biological Diversity	1.5	4	15	UNEP, FAO	DPWM (Lead Institution)
Land Degradation (Deforestation, Desertification)	4.57	4	12	UNEP, FAO, UNDP	DoF and DoA (Lead Institutions)
TOTAL	8	12	35		

SECTION FIVE CONCLUSION AND RECOMMENDATIONS

The opting for the conduct of the National Portfolio Formulation Exercise has provided the Gambia with the opportunity to improve inter-sectorial collaboration and cooperation in addressing the challenges posed by the GEF-5 Focal Areas, Climate Change (Mitigation), Biological Diversity, and Land Degradation (Desertification and Deforestation).

The Program-based budgeting system emphasising the concept of Programs, Projects, and Activities is the preferred approach to implementing the GEF-5 Focal Areas in The Gambia. This approach has the within program use of resources, synergy, and rolling over advantages in implementing the identified programs, project, and activities over the GEF-5 STAR allocation period.

5.1 Conclusion

The program-based approach which was enhanced by the NPFE has been nationally accepted as the way forward to dealing with the GEF-5 Focal Areas and beyond for various reasons such as mentioned above.

5.2 Recommendations

The identified programs, projects, and activities for each of the GEF-5 Focal Areas are being recommended for implementation during the GEF-5 Period.

5.2.1 Climate Change Mitigation (CCM)

Under CCM, four (4) national programs and eight (8) projects, are being recommended for implementation during the GEF-5 period. The total STAR of US\$2million is to be used for the focal area.

5.2.2 Biological Diversity (BD)

Under BD, four (4) national programs and fifteen (15) projects, and one (1) regional program and three (3) projects are being recommended for implementation during the GEF-5 period. The total STAR of US\$ 1.5 million is to be used for the focal area.

5.2.3 Land Degradation (Desertification and Deforestation)

Under LD, four (4) national programs and twelve (12) projects, and one (1) regional program and one (1) project are being recommended for implementation during the GEF-5 period. The total STAR of US\$4.57 million is to be used for the focal area.

ANNEXES

Annex 1

GEF National Portfolio Formulation Exercise Terms of Reference

1. Introduction

All GEF recipient countries are required to undertake, on a voluntary basis, GEF National Portfolio Formulation Exercises, GEF NPFE. These exercises will serve as priority setting tools for countries and serve as guide for GEF Agencies as they assist recipient countries.

The exercise might be organized by National Steering Committees, coordinated by GEF Operational Focal Point and linked with other planning processes in the country, including planning processes of GEF Agencies. As the NPFE is to be carried out under direct access approach, countries should select national entity that has the experience and competence to develop such an exercise.

The principle of transparency and inclusiveness of national stakeholders, including civil society and community-based organizations, will be encouraged in the exercise.

2. Terms of Reference

The expected output would be a document that identified and document the country's strategic priorities under each of the GEF focal areas plus an indicative list of project concepts that could be developed to achieve the objectives.

The National Environment Agency, NEA, being the GEF Operational Focal Point, is seeking for the services of a Consultant to conduct the GEF NPFE for The Gambia according to the following requirements (Details are contained in **Annex 2** of the document).

2.1 Description of the National Steering Committee

- Members
- Number of times and dates of meetings.

2.2 Description of Broader Consultation

- Consultations with GEF Agencies
- Public Consultations

2.3 Brief Description of Country's Global Environmental Challenges in the different Sector

- Climate Change Mitigation
- Biodiversity

- Land degradation, primarily desertification and deforestation

2.4 GEF -5 Operational Procedures for System for Transparent Allocation of Resources, STAR, Allocation and Priority Projects

- GEF Agencies assistance with Project Preparation and Implementation
- Priority Projects
- Whether the country qualifies for the scheme of limited flexibility in using funds across focal areas (under the agreed threshold), or
- Whether the country qualifies or the scheme of limited flexibility (GEF/C.38/9 (GEF-5 Operational Procedure for STAR allocation)).

2.5 Priority Projects in Focal Areas/Themes outside STAR

2.6 Priority Areas for Regional Collaboration

2.7 An outline of How Implementation of These Projects will Contribute to the Fulfilment of Obligations to the Conventions (CDB, UNCCD, UNFCCC).

3. Major Output

The major output of the GEF National Portfolio Formulation Exercise, GEF NPFE, is a report that clearly shows the country's strategic priorities under each of the GEF focal areas plus an indicative list of project concepts that could be developed to achieve the objectives.

4. Qualifications and Experience of Consultant

The Consultant required to conduct the GEF NPFE will be required to have had a Master's degree in either agriculture and/or natural resources management and at least 15 years experience in environment, agriculture and natural resources management in The Gambia and would have served as a senior person in the sector.

The Consultant should be familiar with the consultative processes such as those that were used to put together comprehensive reports such as the GEAP, SOER, and other technical reports dealing with the Conventions (CDB, UNCCD, and UNFCCC). A working knowledge of the GEF Procedures will be an advantage.

5. Duration and Cost

The Consultancy will last for twenty-one working days spread over a period of at least two months to include the validation process required for the completion of the study.

The cost of the work is negotiable depending on the qualification and experience of the person hired to carry out the GEF NPFE.

Annex 2

2.1 List of Institutions Visited and People Met

I.	North Bank Region	July 8, 2011	Institution/Designation
1.	Mr. Edwarr Seckan		Governor
2.	Mr. Lamin Ndow		Chief (District?)
3.	Mr. Omar Njie		Chief (Upper Nuimi)
4.	Mr. Bakary Kassama		Chief (Jokadu)
5.	Mr. Tamba S. K.		Chief Exe. Off, KAC
6.	Mrs. Kaddy Malang		Kerewan LHC
7.	Mr. Baba Jatta		Dept. of Comm. Dev.
8.	Mr. Lamin Jatta		Forut-Gambia
9.	Mr. Yusupha Trawally		ADWAC
10.	Mr. Amadou Jaiteh		Dept. of Forestry
11.	Mr. Ousman C. Jallow		Red Cross
12.	Mr. Badara Jobe		NATC
13.	Mr. Lang Nyirad?		
14.	Mr. Fofana Da Silavie?		
15.	Mr. Momodou Darboe		Dept. of Agriculture
16.	Mr. Batch Samba Njie		Dept. of Agriculture
17.	Mr. Abdoulie Khan		KAC
18.	Mr. Sheriff Dibba		DWR
19.	Alh. E. Dibba		
II.	Upper River Region	July 11, 2011	Institution/Designation
1.	Mr. Omar Khan		Governor
2.	Mr. Momodou S. Jallow		Deputy Governor
3.	Mr. Mohamdou Krubally		Chief (Fulladu East)
4.	Mr. Ebrima Juwara		Chief (Wuli East)
5.	Mr. Julaba Cora		Chief (Tumana)
6.	Mr. Muhammadu Krubally		Rep. Chief (Kantora)
7.	Mr. Bukary P. Gaye		Dept. of Comm. Dev.
8.	Mr. Mamadi Sanneh		Media
9.	Mr. Mafugi Hydara		Basse Area Council
10.	Mr. Mawdo A. Jallow		NDMA
11.	Mr. Babanding Sanyang		Dept. of Forestry
12.	Mr. Omar Jarju		DWR
13.	Mr. Kebba Sillah		WASDA
14.	Mr. Mbemba Dahaba		Dept. of Agriculture
15.	Mr. Pa Manneh Ndure		NEA
16.	Mr. Abu Khan		Governor's Office
III.	Lower River Region	July 13, 2011	Institution/Designation
1.	Mr. Lamin Waa Juwara		Governor
2.	Mr. Wally Sanneh		Deputy Governor
3.	Alh. A. Jammeh		Chief (Kiang West)
4.	Mr. Omar Gibba		Chief (Kiang East)
5.	Mr. Sarjo Darboe		Chief (Jarra West)
6.	Mr. Bakary Jarjusey		Chief (Jarra West)
7.	Mr. Kawsu Drammeh		Chief (Jarra Central)
8.	Hon. Mai Darboe		NAM (District)
9.	Mr. Demba Sanyang		Chief (?)

10.	Ms. Majula Sanneh	Manskonko Area Council
11.	Mr. Foday Camara	Manskonko Area Council
12.	Mr. Ansumana Sambou	Manskonko Area Council
13.	Mr. Falalo Touray	Dept. of Agriculture
14.	Mr. Momodou Lemon	Dept. of Agriculture
15.	Mr. Matarr Badjan	Dept. of Forestry
16.	Mr. Kebba Ceesay	Dept. of Forestry
17.	Mr. Ibrahima Konteh	FFHC
18.	Mr. Ibrahima Janko Sanneh	Education
19.	Alh. Buba Sanneh	General Engineering
20.	Mr. Lamin Saidy	NDMA
21.	Mr. Ebrima Sanyang	?
22.	Mr. Mustapha Sabally	APRC
23.	Mr. Ousman K	Kaiaf
24.	Mr. Silla Manneh	AFET
25.	Ms. Mariama Camara	AFET
26.	Alh. LS Jammeh	Education
27.	Mr. Karamo Demba	Badge Messenger
28.	Mr. Sutay Saidy	Alkalo Buiba
29.	Alh. Lang Barrow	Barro Kunda
30.	Mr. Jankoba Jabbi	Health
31.	Mr. Alhagie Jatta	Dept. Comm. Dev.
32.	Mr. Bakary Jawara	NPCS

	Central River Region	July 19, 2011	Institution/Designation
1.	Mr. Ganjie Touray		Governor
2.	Mr. Malang Saibo Camara		Deputy Governor
3.	Mr. Biran Bah		Chief (Upper Fulladu)
4.	Mr. Momodu Lamin Baldeh		Chief (Lower Fulladu West)
5.	Alh. Bakary Jam Jawo		Chief (Janjangbureh)
6.	Alh. Kebba Touray		Chief (Namina East)
7.	Mr. Chedbu Leigh		Chief (Sami)
8.	Mr. Pierre Bah		Chief (Niani)
9.	Mr. Chernoy Gaye		Dept. of Forestry
10.	Mr. Alagie Cham		NAS
11.	Mr. Musa Samura		KAC
12.	Mr. Bubacarr Fofana		NDMA
13.	Mr. Saidu K Jallow		Dept. of Agriculture
14.	Hon. Sainey Mbye		NAM Upper Saloum
15.	Mr. Muhammad A Tambajang		Dept. of Agriculture
16.	Mr. Kajally Kanyi		Dept. of Comm. Dev.
17.	Mr. Baba Jammeh		ACDO
18.	Mr. Jalamang Darboe		Dept. of Forestry
19.	Mr. Gibbi Yoke		Nianija
20.	Mr. Lamin SM Jawo		Media
21.	Mr. Isatou Bah		DWR
22.	Mr. Fafanding Kinteh		NEA
23.	Hon. Foday Manka		NAM Janjangbureh
24.	Aja. Amie Bayo		Mother's Club Jahaur LBS
25.	Mr. Fulo Baldeh		Participant
26.	Mr. Channeh Ceesay		Ward (Councillor)

27.	Mrs. Amie Sanneh		NEA Support Staff
V.	Dept. Forestry and Water Resources	Aug. 1, 2011	Designation
1.	Mr. Abdoulie Sanneh		Director Dept of Forestry
2.	Mr. Sarjo Fatajo		Assistant Director (DoF)
3.	Mr. Pa Ousman Jarju		Director DWR
4.	Mr. Bernard Gomez		Assistant Director (DWR)
VI.	Dept. Parks and Wildlife Management	Aug. 2, 2011	Designation
1.	Mr. Alpha Jallow		Director
2.	Mr. Ousainou Touray		Senior Wildlife Officer
3.	Mr. Momodou L. Gassama		Principal Officer
4.	Dr. Lewis Saiwana		Technical Assistance
VII.	Ministry of Energy	Aug. 2, 2011	Designation
1.	Mr. Momodou O. Njie		Permanent Secretary
2.	Mr. Kemo Ceesay		Director of Energy
3.	Mr. Momodou Manneh		Deputy Director
VIII.	Min. Forestry and Environment	Aug. 4, 2011	Designation
1.	Mr. Kebba Sonko		Permanent Secretary
2.	Mr. Mustapha Darbo		Deputy Permanent Secretary
3.	Mr. Ebrima Darbo		Principal Assistant Secretary
4.	Mrs. Fatou Gaye		Senior Climate Change Officer
IX.	National Disaster Management Agency	Aug. 4, 2011	Designation
1.	Mr. Essa Khan		Executive Director
2.	Mr. Lamin Tamba		Program Officer
X.	UNDP	Aug. 4, 2011	Designation
1.	Dr. Almamy Camara		Programme Analyst
XI.	Policy Analysis Unit/OP	Aug. 5, 2011	Designation
1.	Mr. Mustapha Camara		Director
2.	Mr. Momodou Lamin Jaiteh		Principal Analyst
3.	Mr. Moses Louis Mendy		
4.	Mr. Malang Jatta		
XII.	West Coast Region	Aug. 8, 2011	Institution/Designation
1.	Alh. Lamin Sanneh		Governor
2.	Alh. Demba Sanyang		Paramount Chief
3.	Mr. Bakary Badjie		Chief (Foni Bondali)
4.	Mr. Momodu Lamin Jarju		Chief (Foni Kansala)
5.	Alh. Kutubo Sanyang		Chief (Foni Jarrol)
6.	Mr. Junkung Camara		Chief (Foni Berefet)
7.	Mr. Lamin Camara		Chief (Foni Bintang)
8.	Mr. Basiru Jarju		Chief (Kombo East)
9.	Mr. Dembo K. Bojang		Chief (Kombo Central)
10.	Mr. Sheriff Bojang		ANRE/TAC
11.	Mr. Joko Kutobo Sanyang		NARI
12.	Mr. Dodou K. Darbo		AFET

13.	Mr. Faburama Darbo	TARUD
14.	Mr. Bakary B. Jammeh	ANRE/TAC
15.	Mrs. Mama Janneh Sawaneh	ANRE/TAC
16.	Mr. Alieu Sowe	NACOFAG
17.	Mr. Serign Momodou Joof	NDMA
18.	Mr. Yusupha Bojang	GRTS-Radio
19.	Mr. Sunkary Badjie	BAC
20.	Mr. Momodou Jallow	CEO-BAC
21.	Mr. Yerro Jallow	GRTS-Radio
22.	Mr. Ousainou Jobe	REO 2
23.	Mr. Mamudu Kieta	Gov. Office
24.	Mrs. Susan Gomez	MMAP
25.	Mr. Saiku Janko	KOMFFORA
26.	Mr. Ousainou Cham	Dept. of Forestry
27.	Mr. Ebrima ML Saïdy	Dept. of Agriculture
28.	Mr. Momodou Lamin Ceesay	GRTS-TV
29.	Mr. Yusupha Touray	GRTS-TV

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15. Foday Camara	Chairman MAC	
16. Alhagie Yahya Jarjusey	Chief	
17. Falalo M Touray	DOA	
18. Alh. Edwarr Seckan	Governor	
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24. Momdou S Touray	NAM Central Badibu	
25. Baba Galleh Jallow	Governor Office	

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54. Abdourahman Touray	NDMA	
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Annex 3
Technical Working Groups

Agriculture and Natural Resources (ANR)

Launched: January 1994

Revised: December 2008

Institution

Ministry of Agriculture

National Environment Agency

Ministry of Forestry and Environment

Ministry of Fisheries and Water Resources and NA

Ministry of Local Govt. Lands

Ministry of Finance and Economic Affairs

Unit

Chair

CONACILLS

Secretariat

Dept. of Agricultural Services

Soil and Water Management

Unit

Department of Planning

Dept. of Livestock Services

National Agriculture Research

Institute

Department of Forestry

Dept. of Parks and Wildlife

Cons.

Department of Fisheries

Dept. of Water Resources

Dept. of Lands and Surveys

Dept. of Community

Development

Catholic Relief Services

Save the Children

Action Aid International–The

Gambia

Terms of Reference

The ANR Working Group's main tasks include:

- 1 Development of a comprehensive ANR Policy and Strategic Plan for the lasting use of natural resources;
- 2 Provide overall guidance and settlement of disputes within the ANR sector;
- 3 Develop a lasting mechanism for ANR Working Group.

Environmental Information System

Launched: January 1994

Revised: December 2008

Institution

National Environment Agency
 Ministry of Agriculture
 Dept. of State for Local Government and Lands

Ministry of Health, Social Welfare
 National Population Commission
 Ministry of Basic and Sec. Education
 University of The Gambia
 The Association of NGOs (TANGO)
 Gambia Bureau of Statistics

Unit

Chair/Secretariat
 Planning Services
 Dept. of Lands and Surveys
 Dept. of Phy. Planning and
 Housing
 Dept of Planning

 National Library
 University Library

Terms of Reference

The EIS Working Group is mandated to:

- 1 Develop a comprehensive policy and action plan on environmental information;
- 2 Manage the affairs of three task forces: Spatial, Non-Spatial, and Documentation;
- 3 Develop a self-sustaining mechanism for the EIS Programme.

The Spatial Task Force:**Terms of Reference**

The Spatial Task Force supports the EIS WG and is responsible for:

- 1 For GIS and Photo interpretation through maps, aerial photos, satellite and climate data;
- 2 Providing EIS information especially on Land Use;
- 3 Developing a self-sustaining mechanism for the EIS programme.

Non-Spatial Task Force**Terms of Reference:**

The Non-Spatial Task Force supports the EIS WG and carries out the following main tasks:

- 1 Provided demographic information;
- 2 Carries out resources inventories and utilization, and conducts economic surveys and provides other socioeconomic data;
- 3 Develops a self-sustaining mechanism for the EIS programme.

Documentation Task Force:**Terms of Reference**

The Documentation Task Force working under the guidance of the EIS WG is mandated to:

- 1 Provide document datasets;
- 2 Set up a computerized reference system;
- 3 Set up a networking system and individual bibliographies;
- 4 Develop a lasting mechanism for the EIS programme.

Chemicals and Pesticides Control and Management Board

Launched: May 1994

Revised: December 2008

Institution

National Environment Agency
Ministry of Agriculture

National Agricultural Research Institute
Ministry of Health and Social Welfare
Services

Ministry of Finance and Econ. Affairs
(GRA)

Ministry of Justice
Secretary

Gambia Chamber of Commerce and Industry

Unit

Chair and Secretariat
Dept of Agricultural Services
Livestock Services

Dept of Medical and Health

Gambia Revenue Authority

Solicitor General and Legal

Terms of Reference

The main functions of the Board include:

- 1 Register, manage, monitor, control the importation, manufacturing, sales, storage and disposal of hazardous chemicals and pesticides in The Gambia through the issuance of certificates, licenses, and permits;
- 2 Prepare guidelines in the handling of hazardous chemicals and pesticides;
- 3 Conduct public awareness campaigns on the safe use of chemicals and pesticides;
- 4 Periodically publish a list of banned chemicals and delegate and public officer to monitor their sale and/or use.

Environmental Education and Communications

Launched: June 1995

Revised: December 2008

Institution

Ministry of Basic and Sec. Education
Ministry of Higher Ed.; Res.; Sc.; and Tech.
University of The Gambia (UTG)
Curriculum Research & Personnel Devt. Division.
Non-Formal Education Division
National Environment Agency
Ministry of Trade, Industry and Regional Integration
Ministry of Youth and Sports
Ministry of Health, Social Welfare
Women's Bureau
Ministry of Forestry and Environment

Ministry of Fisheries, Water Resources and NA

Ministry of Agriculture

Unit

Minister (Chair)

(Secretariat)

Health Education Unit

Dept. of Parks and Wildlife

Dept. of Forestry

Dept. of Water Resources

Water and Sanitation Focal
Point

Dept. of Fisheries

Dept. of Agricultural Services

Dept. of Livestock

Ministry of Communications Information
 National Population Commission
 Gambia College
 Gambia Teachers Union (GTU)
 Nova Scotia Gambia Association (NSGA)
 Gambia Technical Training Institute (GTTI)
 Banjul City Council
 UNICEF
 US Peace Corps

Soil and Water Management
 Unit
 Dept. of Information Services

Cleansing Services

Terms of Reference

The EE&C responsibilities include:

- 1 Development of a comprehensive EE&C policy and strategic plan for the effective communication of environmental matters through the print and broadcast media;
- 2 Provide overall guidance on EE&C program;
- 3 Develop a lasting mechanism for EE&C Working Group.

Coastal and Marine Environment (C&ME)

Launched: August 1995 Revised: December 2008

Institution

Unit

National Environment Agency	Chair/Secretariat
Ministry of Trade, Industry and Regional Integration	Geology Unit
Ministry of Local Government and Lands	Dept of Physical Planning Dept. of Lands and Surveys
Ministry of Fisheries and Water Resources	Dept of Water Resources
Ministry of Forestry and Environment	Dept of Forestry Dept. of Parks and Wildlife
Ministry of Works and Infrastructure	Dept of Technical Services
Gambia Public Transport Corporation	
Ministry of Tourism and Culture	National Tourism Office
Ministry of Finance and Economic Affairs	
Gambia Ports Authority	
Gambia Public Transport Corporation	
Banjul City Council	
Kanifing Municipal Council	
Brikama Area Council	
Gambia National Army	Marine Unit

Terms of Reference

- 1 Development of a comprehensive C&ME Policy and Strategic Plan for the Effective Management of the coastal area and its resources;

- 2 Provide overall guidance on C&ME programme;
- 3 Develop a lasting mechanism for C&ME Working existence.

Environmental Impact Assessment (EIA)

Launched: April 1996

Revised: December 2008

Institution

National Environment Agency
 Ministry of Trade, Industry and Regional Integration
 Ministry of Agriculture
 Unit
 Ministry of Local Government, Lands
 and Housing
 Ministry of Works and Infrastructure
 Ministry of Finance and Economic Affairs
 Gambia Chamber of Commerce and Industry
 TANGO

Unit

Chair/Secretariat
 Geology Unit
 Soil and Water Management

 Dept. of Lands and Surveys
 Dept. of Physical Planning

 Dept of Technical Services

 ISRA

Terms of Reference

- 1 Development of a comprehensive EIA Policy and Strategic Plan for the effective integration of EIA into the national development framework;
- 2 Provide overall guidance on EIA programme;
- 3 Develop a lasting mechanism for EIA Working Group.

Environmental Legislation

Launched: July 1996

Revised: December 2008

Institution

Attorney General's Chambers
 Attorney General's Chambers
 Attorney General's Chambers
 National Environment Agency
 Ministry of Agriculture
 Ministry of Health & Soc. Welfare
 Ministry of Local Government, Lands
 and Housing
 Gambia Police Department
 Gambia Chamber of Commerce and Industry
 Gambia Bar Association
 TANGO

Unit

Draftsperson, Chair
 Criminal Litigator
 Civil Litigator
 Secretariat
 MoA Hq Representative
 Environmental Health Unit
 Dept. of Physical Planning

 ISRA

Terms of Reference

- 1 Review the National Environmental Management Act (1994?) to ensure that it is millennium complaint and enforceable and the polluter pay principle is applicable;

- 2 Provide overall guidance on environmental law enforcement;
- 3 Develop a lasting mechanism for EL Working Group.

Environmental Quality

Launched: July 1995 Broadened to current membership in August 1996

Revised: December 2008

Institution

National Environment Agency
 Banjul City Council
 Kanifing Municipal Council
 Ministry of Agriculture
 Ministry of Fisheries and Water Resources
 Ministry of Health and Social Welfare

 Ministry of Local Government, Lands

 and

 Ministry of Works and Infrastructure
 Ministry of Trade, Industry and Regional Integration
 Ministry of Trade, Industry and Employment
 Ministry of Justice
 Governor's Office, WCR
 Governor's Office, NBR
 Governor's Office, LRR
 Governor's Officer, URR
 Governor's Office, CRR/S
 Governor's Office, CRR/N
 Gambia Chamber of Commerce and Industry
 GAMWORKS Agency
 TANGO
 Utilities Holding Corporation
 Gambia Police Force
 National Agriculture Research Institute

Unit

Chair/Secretariat

 MoA
 Dept of Water Resources
 Environmental Health Unit

 Dept. of Community
 Development
 Dept. of Physical Planning

 Housing
 Dept. of Lands and Surveys
 Dept of Planning

 Head Office Geology Unit

Terms of Reference

- 1 Review the Environmental Quality Standard? to ensure that it is millennium complaint and enforceable and the polluter pay principle is applicable;
 - 2 Provide overall guidance on environmental quality enforcement;
 - 3 Develop a lasting mechanism for EQ Working Group.
-

National Technical Ozone Depletion Substances (ODS) Working Group
Launched: Monday, August 3, 1998 **Revised: December 2008**

Institution

Ministry of Agriculture
Ministry of Trade, Industry and Regional Integration
Ministry of Health
Gambia Technical Training Institute

Unit

Banjul Breweries
Radville Farms
Hanser Refrigeration
Services

Terms of Reference

- 1 Development of a comprehensive Ozone Policy and Strategic Plan for the elimination of ODSs;
- 2 Provide overall guidance on elimination of all forms of environmental pollutants;
- 3 Develop a lasting mechanism for ODS Working Group.

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