



FEDERAL REPUBLIC OF NIGERIA

**COMBATING DESERTIFICATION AND MITIGATING  
THE EFFECTS OF DROUGHT IN NIGERIA**

*The Revised National Report on the Implementation of the  
United Nations Convention to Combat Desertification in  
those Countries Experiencing Serious Drought and/or  
Desertification, Particularly in Africa (CCD)*



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## ACRONYMS

ADB - African Development Bank  
AMCEN – African Ministerial Conference on Environment  
APCU –Afforestation Project Coordinating Unit  
CAPPAs- Community Action Programme for Poverty Alleviation  
CAZS- Centre for Arid Zone Studies  
CBO – Community Based Organizations  
(UN) CCD – (United Nations) Convention to Combat Desertification  
CIDA – Canadian International Development Agency  
CILSS – Permanent Inter-State Committee for Drought Control in the Sahel  
COP – Conference of Parties  
DFID – Department for International Development  
ECN – Energy Commission of Nigeria  
ECOWAS – Economic Community for West African States  
EEC – European Economic Community  
EIA – Environmental Impact Assessment  
EMP – Environmental Management Plan  
EU – European Union  
FEPA – Federal Environmental Protection Agency  
FMA & RD – Federal Ministry of Agriculture and Rural Development  
FMENV – Federal Ministry of Environment  
FMST – Federal Ministry of Science and Technology  
FMWR - Federal Ministry of Water Resources  
FORMECU – Forestry Monitoring, Evaluation and Coordinating Unit  
FRIN – Forestry Research Institute of Nigeria  
GIS – Geographic Information System  
HNWCP – Hadejia-Nguru Wetland Conservation Programme  
IUCN – International Union for the Conservation of Nature  
JCCE – Joint Consultative Committee on Education  
JICA – Japanese International Cooperation Agency

LCBC – Lake Chad Basin Commission  
NAP – National Action Programme/National Policy on Agriculture  
NAPEP – National Poverty Eradication Programme  
NBSAP – National Biodiversity Strategy and Action Plan  
NCAZAP – National Committee on Arid Zone Afforestation Programme  
NCE – National Council on Education  
NCF – Nigerian Conservation Foundation  
NCCDC – National Coordinating Committee on Desertification Control  
NCS – National Conservation Strategy  
NDE – National Directorate of Employment  
NEAP – National Environmental Action Plan  
NEAZDP – North East Arid Zone Development Programme  
NERFUND – National Economic Reconstruction Fund  
NEST – Nigerian Environmental Action/Study Team  
NFAP – National Forestry Action Plan  
NGO – Non-Governmental Organization  
NNJC – Nigerian-Niger Joint Commission for Cooperation  
NPE – National Policy on Environmental  
NPS – National Parks Service  
NWRMP – National Water Resources Action Plan  
OPS – Organized Private Sector  
RBDA – River Basins Development Authority  
RSPB – Royal Society for the Protection Birds  
SEAP – State Environmental Action Programme  
SEPA – State Environmental Protection Agency  
UNCED – United Nations Conference on Environment and Development  
UNESCO – United Nations Educational, Scientific and Cultural Organization  
UNDP – United Nations Development Programme  
USAID – United States Agency for International Development  
WB – World Bank  
WWF – World Wildlife Fund

## **EXECUTIVE SUMMARY**

### **Background**

Nigeria is located between latitudes 4°N and 14°N and longitudes 2° 2' and 14° 30' East. By virtue of its spatial extent the country encompasses various climatic regimes and physiographical units representing a wide variety of ecological zones such as rainforest Guinea savanna, Sudan savanna and Sahel savanna. The Sudan and the Sahelian savanna lie within latitudes 9° N and 14° N. The semi-arid zone, which comprises the Sudano-sahelian region, is by its nature and characteristics, susceptible to desertification. This zone is most vulnerable to climatic and human pressures arising from rapidly increasing population and intensive economic activities. The problem of desertification therefore, requires urgent attention, in a holistic manner, so as to ensure that the semi-arid zone continues to support the socio-economy of the area.

### **Extent and Severity of Desertification**

In Nigeria, desertification (together with soil erosion) accounts for about 73% of the estimated total cost of US\$5.110 billion per annum the country is losing from environmental degradation. The country has commenced the process of estimating the extent and severity of desertification in the 11 northern States, where it is considered as the most pressing environmental problem. The study will include social and economic dimensions, landmass affected, rate of encroachment, farming systems, as well as economic and water resources losses. The Ecological Fund Office is providing the required financial resources.

### **Past National Efforts to Combat Desertification**

The Sahelian drought of 1972/73 set into motion the establishment of afforestation programmes, the construction of dams for irrigation and the establishment of appropriate national institutions. Such institutions include the River Basin Development Authorities (RBDAs), the Forestry Management, Evaluation and Coordinating Unit (FORMECU), the Energy Commission of Nigeria and the National Coordinating Committee on Desertification Control (NCCDC).

### **National Policies**

Government has taken cognizance of the multi-sectoral nature of the problems of desertification. In this regard, it has developed a number of policies and plans ranging from agricultural to energy. Some of the policies relevant to desertification control include the National Policies on the Environment, Water Resources, Energy, Drought and Agricultural.

### **Plans and Strategies**

In addition to these policies, some plans and strategies have been put in place. These strategies and action plans contain elements that address the problem of desertification. Some of these include the Nigerian National Environmental Action Plan (NEAP), and the States Environmental Action Plans (SEAPs). The SEAPs were prepared for each of the 36 States of the Federation and the Federal Capital Territory through participatory processes of

planning and action, which seek to integrate socio- economic and ecological perspectives in to all the States' policies, plans and programmes as well as those of all stakeholders and interest groups within the State. For those States in the desert-prone region, their SEAP Reports prioritized their environmental problems with desertification ranking as the most important problem.

Other plans and strategies include the National Forestry Action Plan, the National Conservation Strategy, the Natural Resources Conservation Action Plan, the National Water Resources Master Plan, the National Biodiversity Strategy and Action Plan, the Green Agenda of the VISION 2010 Report, the Nigeria's National Agenda 21 and the National Action Programme to combat Desertification.

### **Institutional and Legal Framework**

Prior to the coming into force of the UN Convention to Combat Desertification, certain national and state Laws and regulations, which relate directly or indirectly to desertification control or related matters have been in force in Nigeria. In many situations, these Laws contain provisions that address the causes of desertification such as deforestation, over-exploitation of natural resources, inappropriate agricultural practices, bush burning, etc. Such Laws include the Federal Environmental Protection Agency (FEPA) Decree, the National Parks Decree 101 of 1991, the Environmental Impact Assessment (EIA) Decree No 86 of 1992, the Endangered Species (Control of International Trade and Traffic in Fauna and Flora) Decree, 1985, the Land Use Decree of 1978 and the National Water Resources Decree No. 101 of 1993.

In our efforts to implement these laws and regulations, several institutional arrangements have been put in place in the country for management of matters relating to desertification even before the advent of the CCD. Some of the institutions are policy-making bodies while some are actually involved in implementation of deliberate government policies and projects to prevent and mitigate the menace of desertification. The defunct Federal Environmental Protection Agency was set up in 1988 and charged with the responsibilities on environmental protection, biodiversity and natural resources conservation including policy matters relating to desertification control and was in fact the National Focal Point for the CCD in Nigeria. In 1999 the new civilian administration created the Federal Ministry of Environment with the defunct FEPA as the nucleus of the new Ministry. The Federal Ministry of Environment has the following technical departments:

- Department of Forestry;
- Department of Soil Erosion, Flood Control and Coastal Zone Management;
- Department Environmental Assessment;
- Department of Pollution Control and Environmental Health; and
- Department of Environmental Conservation.

Other Institutions relevant to desertification control include the following:

- Federal Ministry of Agriculture and Rural Development
- Federal Ministry of Water Resources, which is responsible for the management of water resources generally in the country including River Basin Development



Authorities established to capture, store and distribute water resources for irrigation, fishing and other agricultural purposes

- Centre for Arid Zone Studies, University of Maiduguri, and
- Centre for Energy Research, Usman Danfodio University, Sokoto

At the state level, however, most of the states in the country have forestry, agricultural and wildlife laws, bush burning and grazing reserve regulations. These categories of laws are directed at controlling the notable causes of desertification earlier enumerated. The most significant of these laws relevant to desertification control are the Forestry Laws and Edicts most of which are obsolete and require review.

### **Bilateral/Multilateral Institutions**

Nigeria is involved in a number of bilateral and multilateral relations, which directly or indirectly relate to desertification control. These include Secretariat of CCD, LCBC, NNJC, AMCEN, CILLS, ECOWAS, JICA, the USAID and DFID. Others are The World Bank, ADB, UNDP, IUCN, WWF, and RSBP. The Government has also interacted with a number of civil society organisations such as Nigerian Environmental Study Action Team (NEST), Nigerian Conservation Foundation (NCF), Savannah Watch, Farmers Unions, Women Associations, etc.

The primary institution that is charged with the responsibility for desertification control at the State level is either the Ministry of Environment or Agriculture and Natural Resources depending on the State. Other institutions relevant to desertification control include the State Environmental Protection Agencies (SEPAs) charged with the responsibility of protection of the environment and biodiversity conservation in the various States. The State Environmental Protection Agencies and the State Ministries of Environment or Agriculture and Natural Resources in the 11 frontline States prone are members of the NCCDC.

### **On-going Measures**

There are several on-going interventions that are geared towards desertification control in Nigeria. These are measures to alleviate poverty, conserve biodiversity, restore degraded lands, and promote desertification awareness activities and environmental education. Other measures include the development of an environmental information system, conducting research and surveys, promoting improved energy use efficiency and adoption of renewable energy technologies, institutional strengthening and capacity building measures. These on-going projects consist part of the implementation of the NAP strategies.

### **Planned Programmes and Activities**

Given the magnitude and extent of desertification in the country, Government future programmes will focus on arresting desertification by protecting desert prone areas, rehabilitating affected areas and institutionalizing drought-ameliorating measures. It is also envisaged that by the year 2010, environment friendly technologies such as solar water heaters, solar stills, solar dryers, photo-voltaic water pumping village solar electrification projects, as well as solar powered refrigerators for rural health centres would have been put in place.

Government has approved the establishment of a 'Green Wall' or Shelterbelt stretching from Sokoto Basin in the Northwest to Chad Basin in Northeast cutting across 7 northern states, namely Sokoto, Kebbi, Zamfara, Katsina, Jigawa, Yobe and Borno. The Green Wall is expected to cover a distance of about 1,500km with a width of 1km (150,000 ha). This project, which has already take-off, is entirely community based. The Green Wall project is being executed simultaneously with the establishment of community shelterbelts and community woodlots in the remaining 4 frontline states and all the buffer states including FCT covering a further 3,000ha. At this initial stage, the Federal Government is putting in the necessary facilities, which will, at the appropriate time, be handed over to the States and Local Governments for management. Hence, the local communities are involved in the implementation, supervision and sustenance of the project. These planned programmes have been designed to address some of the activities proposed for implementation in the NAP.

### **Consultative and Participatory Process**

In recognition of the need for the involvement of all stakeholders in the preparation of Action Programmes to combating desertification, Government has collaborated with relevant NGOs, CBOs, Organized Private Sector (OPS), and Community leaders, the academic and research institutions, sub-regional and multilateral organization. In general, collaboration has been with ECOWAS, CILLS, LCBC, the World Bank, UNDP, DFID (UK), the United States Government (USAID) as well as NGOs such as IUCN, WWF, RSPB, NEST and NCF.

### **Sources of Funds**

The Federal Ministry of Environment is the key institution responsible for the implementation of desertification control programmes in the country. The Ministry derives its funding from annual grants through the Federal Ministry of Finance, special grants from the Ecological Fund Office and residual funding assistance either in cash or in kind from bilateral and multilateral organizations. The Ecological Fund is a special fund, made up of 2% of the annual Federation Account, which is set aside by the Federal Government for the amelioration of ecological problems including desertification.

The major projects funded from annual budgetary allocations include the arid zone afforestation Project, model village programmes, and the National Tree Planting Campaign.

### **International Assisted Programmes/Projects**

The drought of the 1970s and 80s in the Sahelian zone of the country led to breakdown of biological processes, depleted water supplies, slow growth of trees and loss of livestock and crop production. Government action led to harnessing of Lome funds to support three programmes in the drought-affected areas. These include the Sokoto Environment Programme, the Sokoto Environment Programme and the Northeast Arid Zone Development Programmes.

Other major multi-lateral programmes included the World Bank Forestry II Project, the Hadejia–Nguru Wetlands Conservation Project, the Jigawa State Wetlands Livelihood Project, Integrated Management Plan for the Lake Chad Basin, the UNEP/GEF

Transboundary Ecosystem Management Project, the CIDA Assisted Community Afforestation Project, the UNEP/Belgium Renewable Energy Project and the National Fadama II Project.

### **Review of Benchmarks and Indicators**

Nigeria is in the process of establishing benchmarks and indicators for developmental projects including desertification control programmes and projects. The National Planning Commission is responsible for monitoring all projects. However, the Commission collaborates with the Federal Environmental Protection Agency in monitoring environmental projects. Other various Government agencies are also engaged in monitoring of their respective sectoral projects as part of their responsibilities for the country's developmental efforts.

### **Conclusion**

This Report contains a synopsis of the state of desertification in the country, historical trends and past national efforts as well as on-going and planned measures for combating the menace of desertification. It also highlighted the inability of Government to provide adequate funds for desertification control and emphasized the need for the review and streamlining of policies and legislation targeted at combating the menace of desertification.

The Report has highlighted a number of on-going and planned projects that address some of the activities proposed for implementation of the NAP will be raised if the proposed 5-10% of ecological fund is committed to desertification control activities. The establishment of the proposed National Desertification Commission will also facilitate a aggressive implementation of the National Action Programme on desertification.

## 1.0 BACKGROUND

Nigeria, which is located between latitudes 4°N and 14°N and longitudes 2° 2' and 14° 30' East has a total land area of 923,773 km<sup>2</sup> and a population of over 100 million. The Republics of Niger and Chad border the Country to the north, the Atlantic Ocean to the south, and the Republics of Cameroon and Benin to the east and west, respectively. By virtue of its spatial extent the country encompasses various climatic regimes and physiographical units that give rise to a wide variety of ecological zones. These zones range from flush forest vegetation in the south to Guinea savanna in the middle belt region, Sudan savanna in the north and Sahelian vegetation in the extreme northern part of the country.(Map 1). Of these ecological zones, the Sudan and sahelian regimes are most vulnerable to climatic and human pressures leading to desertification. The spatial extents of the vegetation types are presented in Annex 1.

The Sudan and the Sahelian savanna constitute the semi-arid areas with typical low rainfall and sparse vegetation. They lie within latitudes 12° N and 14° N. Average annual rainfall in these zones varies from as low as 250 mm in the extreme northeastern part to 750 mm in the southern part. In this region, the rainfall is largely erratic. The humid areas are found in the southern parts of the country, while sub-humid areas with moderate rainfall and derived vegetation are found in the middle belt. The geology as well as the soil types also vary markedly across the country.

The semi-arid zone of Nigeria, which by its nature and characteristics is susceptible to desertification process, constitutes the largest grain producing area of the country. This is in addition to the fact that most of the livestock are concentrated in the area. This zone is regarded as the locus of human's greatest gamble with nature. In years of good and copious rainfall, the region entices and rewards human advances with bountiful agricultural yields and livestock production. Conversely, in periods of poor rainfall, there is an increasing pressure, which sometime results in food deficit and associated unfavorable social consequences.

Human attempts to exploit the resources of the semi-arid ecosystems in Nigeria, especially in recent times of severe and persistent drought, may have set a scene for ecological damage in the region. The situation is being aggravated by the increase in human population, which appears to be stressing the natural support system. In many areas, sustainable-yield threshold of the vegetation and soils are being breached.

Today, the problems of desertification are now being addressed in a holistic manner to ensure that the semi-arid zone continues to support the human and natural resources. The following sections highlight the extent and severity of the problem, national efforts to address it, existing policies and strategies that are in place, the proposed strategies for combating it, as well as required funding and technical assistance.

## **2.0. EXTENT AND SEVERITY OF DESERTIFICATION**

In Nigeria, there is a general consensus that desertification is by far the most pressing environmental problem in the northern parts of the country. The visible sign of this phenomenon is the gradual shift in vegetation from grasses, bushes and occasional tress, to grass and bushes and in the final stages, expansive areas of desert-like sand. The process of estimating the extent and gravity of desertification in the country has started. The study will include social and economic dimension, total landmass, encroachment rate, farming systems, the economic and water resources. The Ecological Fund Office is providing the bulk of the financial resources required.

It has been estimated that between 50% and 75% of Bauchi, Borno, Gombe, Adamawa, Jigawa, Kano, Katsina, Kebbi, Sokoto, Yobe, and Zamfara States in Nigeria are being affected by desertification. These states, with a population of about 35 million people account for about 35% of the country's total land area. In addition, seven adjacent states to the south are reported to have about 10% to 15% of their land areas threatened by processes of desertification. It is estimated that the country is currently loosing 351,000 hectares of its landmass to desert-like conditions annually, and such conditions are estimated to be advancing southwards at the rate of about 0.6km per year. In the absence of concrete remedial and mitigative measures, it is estimated that the total cost of environmental degradation in Nigeria would amount to about US\$5.110 billion per annum out of which, land degradation alone (including desertification and soil erosion) accounts for about 73%.

The increasing pressure on the limited natural resources of the desertification-prone zone, arising from the influx of migrants from neighboring countries, results in over-grazing and continuous overexploitation of the marginal lands. This has in turn aggravated the twin problems of drought and desertification. Entire villages and major access roads are being buried under sand dunes in the extreme northern parts of Borno, Jigawa, Kebbi, Katsina, Sokoto and Yobe States. The pressure of migrating human and livestock populations from these areas are being absorbed by pressure point buffer states such as Benue, Kaduna, Kwara, Niger, Plateau, Taraba and the Federal Capital Territory (FCT). This action leads to an intensive use of the fragile and marginal ecosystems resulting in further degradation even during years of normal rainfall.

### **3.0. PAST NATIONAL EFFORTS TO COMBAT DESERTIFICATION**

The major concern about the possible southward shift of the Sahara desert into Nigeria was expressed in the 1930s. In response, an Anglo-French Commission in 1937 investigated the report in the northern parts of Nigeria, and directed the border emirates to embark on tree planting to stop the encroachment. Thousands of seedlings were distributed at nominal prices.

It was not until the 1940s that a small action programme in the form of a tree planting campaign was launched. The bad situation of the affected areas prompted the establishment of shelterbelts in the northern fringes in the 1960s. The steady deterioration of land in northern Nigeria has continued largely to be ineffectively challenged for several years. The catastrophic Sahelian drought of 1972/73 however, jolted the Federal Government in to action. This drought, which was recognized as a national disaster, prompted ad hoc relief packages consisting, where feasible, the provision of subsidized food, supply of water-by-water tanks, bore holes and wells as well as making seeds available at planting time, among others. The drought nonetheless encouraged the establishment of afforestation programmes and the construction of dams for irrigation as well as the establishment of the initial three River Basin Development Authorities (i.e. Chad Basin, Hadejia-Jama'are and Sokoto-Rima).

In 1977, the Federal Government set up a National Committee on Arid Zone Afforestation Programme with the responsibility of examining the in-depth problem of desertification and drawing up a suitable programme of afforestation geared towards checking desert encroachment. A programme of shelterbelt plantings for the protection of adjoining agricultural lands against desiccating winds in the extreme northern part of the region was embarked upon (Annex 3), but this committee was dissolved in 1985. Its functions were transferred to Department of Rural Development and River Basin Development Authorities (RBDAs) in the then Federal Ministry of Agriculture, Water Resources and Rural Development.

By 1987, the RBDAs were reorganized and their afforestation functions transferred to the Forestry Department of the Federal Ministry of Agriculture. In the same year, the Forestry Management Evaluation and Coordinating Unit (FORMECU) was established to co-ordinate the World Bank and African Development Bank (ADB) assisted forestry projects in the country. The achievements of the World Bank Assisted Afforestation Programme are presented in Annex 4.

The Energy Commission of Nigeria, through the energy research centres as well as in other tertiary institutions, a number of environmentally friendly energy technologies have been developed and adapted. These include solar photovoltaic electricity generators, wind and small-scale hydro power generators, solar cookers and dryers, solar chick brooders, improved woodstoves, biogas generators, coal briquettes and stoves, fine particle biomass stoves, fine particle biomass stoves, solar refrigerators etc.

The Energy Commission of Nigeria has established a number of pilot plants to disseminate these technologies especially in Sokoto, Katsina and Kaduna States. Other programmes such as the North East Arid Zone Development Project, defunct Petroleum Trust Fund, Federal Ministries of Environment & that of Water Resources and State Government initiatives have established solar powered facilities for water pumping, rural health centre lightings and vaccine storage.

Other national efforts that have bearing on desertification control include the following:

- Management of Water Resources focused on the utilization of groundwater to supplement surface water.
- Development and application of planting and tillage techniques that conserve soil moisture as well as the use of cropping systems that enrich and stabilize the soil.
- Promotion of appropriate rainwater harvesting techniques.
- Establishment of Strategic Grains Reserves to improve food security.
- Development and promotion of alternative energy sources, as well as energy saving devices, to reduce the pressure on the fuelwood (e.g. solar energy, wood efficient stoves, coal briquetting, biogas, etc.)
- Building national institutional capacity to undertake research and development of data base and technologies in support of desertification control (e.g. Centre for Arid Zone Studies [CAZS], Forestry Research Institute of Nigeria [FRIN], Energy Research Centres),
- Integrated programmes to alleviate poverty (NAPEP),
- Creating awareness and public participation through tree planting campaigns, electronic, print and folk media, schools conservation clubs, etc.

Since Rio Conference in 1992, Nigeria has made significant efforts in addressing environmental and sustainable development issues, which were identified and agreed upon at the United Nations Conference on Environment and Development (UNCED). Since signing the United Nations Convention to Combat Desertification (UNCCD), in October 1995, a number of initiatives including the establishment of a National Coordinating Committee on Desertification Control (NCCDC), and the designation of an implementation center have been taken. The NCCDC, which is the national body for the implementation of the Convention in Nigeria, is composed of various stakeholders including government agencies and key environmental NGOs and CBOs.

In line with the relevant provisions of the CCD and the decisions of the first and second Conferences of Parties, the NCCDC initiated the process of preparing a NAP for the implementation of the Convention in Nigeria with the financial assistance received from

the Secretariat of the Convention through CILLS. Two National Consultants were identified and recruited to facilitate the process. The NAP process was completed in 2000 and adopted by government in June 2001.

### **3.1 National Policies**

Government has taken cognizance of the multi-sectoral problems of desertification. In this regard, it has developed a number of policies and plans ranging from agricultural to energy. Some of these, which contain provisions relevant to desertification control, are highlighted below:

#### **3.1.1 National Policy on Environment**

Launched in 1989, the Policy elaborates a sub-sectoral policy on desertification control, which clearly indicates synergies with other sub-sectors relating to population, culture, housing and human settlements, biological diversity, conservation of natural resources, land-use and soil conservation, agriculture, water resources, forestry, wildlife and protected areas, mining and mineral resources, energy, education, science and technology, flood and erosion control and the cross-sectoral issues of public participation. This policy has been reviewed in 1999 to promote inter-sectoral approaches to combating desertification and other environmental problems through strategies aimed at poverty reduction.

#### **3.1.2 National Agricultural Policy**

Within the National Agricultural Policy, there are sub-sectoral policies covering livestock, forestry, food production, and land and water resources. The relevant sections of this policy that are relevant to desertification control include:

- The protection of agricultural land from drought, desert encroachment, soil erosion and flood;
- Protection and conservation of forests, forest regeneration and afforestation and promotion of alternative sources of energy other than wood;
- Ensuring integrated water resources management approaches that promote rational utilization, conservation and protection of the ecosystem;

#### **3.1.3. National Policy on Drought**

The thrust of this policy is to ensure that Nigeria shall efficiently harness optimally and utilize her enormous natural and human resources in such a way that no citizen suffers starvation, deprivation and thirst during drought. The policy's main objective is proactively managing drought with minimal losses in lives and properties and to reduce population mobility to the barest minimum.



### **3.1.4. National Energy Policy**

A comprehensive and integrated National Energy Policy, which makes provisions for the coordinated development, utilization and management of all the different energy resources, has been developed. In particular, it makes provisions for rural energy supply with conventional (petroleum products, gas, coal, electricity) and non-conventional and renewable (solar, wind, small-scale hydro, biomass, fuel wood etc) alternatives. Provisions, which are relevant to desertification, discourage the utilization of fuel wood while providing and promoting viable alternatives to fuel wood. Such provisions include:

- Aggressively and effectively develop and harness solar, wind, hydropower and non-fuel wood biomass energy resources and integrate them into the national energy mix.
- Take particular measures to ensure the use of these energy resources in rural energy supply.
- De-emphasise the use of fuel wood and promote alternative energy resources and technologies to fuel wood.
- Exploit and utilize coal in an environmentally friendly manner, including especially the use of coal briquettes as an alternative to fuel wood.

## **3.2 Plans and Strategies**

In addition to the policies highlighted above, some plans and strategies have been put in place. These strategies and action plans contain elements that address the issue of desertification, some of which are highlighted below:

### **3.2.1 National Environmental Action Plan (NEAP)**

With the support from the World Bank, the NEAP was developed as a meaningful framework to assist in the analysis, evaluation, and discussion of the interdependence between the environment and the economy in Nigeria. It also seeks to provide an assessment of Nigeria's environmental priorities and an identification of options for mitigating the impact of environmental degradation in the country. Its implementation gave rise to the World Bank assisted Environmental Management Project (EMP) in Nigeria and helped in strengthening Environmental Agencies at Federal and State levels. It also helped to catalyze the study on costs/benefits of biodiversity conservation, enactment of EIA legislation and the setting up of environmental standards. The implementation of NEAP was also supported by UNDP through the Environment and Natural Resources Management Programme for Nigeria in the form of capacity building and institutional strengthening of Federal and State Environmental Protection Agencies.

### **3.2.2 States Environmental Action Plans (SEAPs)**

It was in the process of implementing NEAP that the State environmental Action Plan (SEAP) was prepared for each of the 36 States of the Federation and the Federal Capital Territory. The SEAP process started in 1995 and was completed in 1998. It is a participatory process of planning and action, which seeks to integrate socio-economic and ecological perspectives into all the States' policies, plans and programmes as well as those of all stakeholders and interest groups within the State. For those States in the desert-prone region including Bauchi, Borno, Adamawa, Gombe, Jigawa, Kano, Katsina, Kebbi, Sokoto, Yobe and Zamfara, the SEAP Reports prioritized their environmental problems with desertification ranking as the most important problem. This was followed by deforestation, land degradation, loss of biodiversity and waste management in that order. The Reports also focused on institutional framework and suggested some investment measures and options to tackle the identified problems.

### **3.2.3 National Forestry Action Plan**

The National Forestry Action Plan, which was developed with the assistance of the World Bank and UNDP, is an offshoot of Tropical Forestry Action Programme. It is a framework for halting deforestation and associated destructive impacts and a veritable instrument, which assisted in the elaboration of the Nigeria's National Agenda 21.

### **3.2.4 National Conservation Strategy**

This is to ensure strategic approach to address environmental and natural resources issues in order to guarantee sustainable benefits to the greatest number of people. The aim is to manage the ecosystems in such a way that they yield greatest sustainable benefit to present generations while maintaining the potential to meet the needs and aspirations of future generations in such a way that essential ecological processes and life support systems are maintained. The strategy focuses on the main resources: vegetation and forage resources, water resources, marine and fisheries resources, wild animal's resources, and soil resources.

### **3.2.5 Natural Resources Conservation Action Plan**

The Natural Resources Conservation Action Plan aims at collating and evaluating data and knowledge on natural resources with a view to developing programmes of action for management and sustainable use of natural resources. The objective amongst others is to identify, describe and analyze current state and status of each resource, misuse and abuse, propose institutional arrangement for effective implementation of the plan and examine man-power, fiscal and legal implication of action plan;

### **3.2.6 National Water Resources Master Plan**

A National Water Resources Master Plan for the period 1995 – 2020 was done with technical assistance of the Japanese Government through the Japanese International Co-

operation Agency (JICA). The Master Plan aims at sustainable utilisation of water resources, particularly in the semi-arid zone of the country.

### **3.2.7 National Biodiversity Strategy and Action Plan**

The goals and objectives are to conserve and enhance the sustainable use of the nation's biodiversity resources and to integrate biodiversity-planning considerations into national policy and decision-making and the Green Agenda of the Vision 2010. It highlighted various measures at national, state, local government levels as well as by the private sector to combat desertification and other environmental problems and to mainstream sustainable developmental issues into national plans and programme.

The National Biodiversity Strategy and Action Plan is presently undergoing a review with the support of GEF as part of it enabling activities. The Action Plan will be more participatory and will place greater emphasis on issues of access to genetic resources and equitable sharing of benefits as well as identifying synergies with other environmental and sectoral issues including desertification control.

### **3.2.8 The Green Agenda of the VISION 2010 Report**

The Vision 2010 Report, a comprehensive framework for the attainment of sustainable human development in Nigeria contains a chapter on The Green Agenda, which identifies desertification as major environmental problems in the country. In addition to containing some specific mission/policy statements, the Report also articulated action plans and strategies as well as allocating implementation responsibilities to all stakeholders. The Green Agenda component of the Report contains elements for formulation of plans and strategies on desertification control.

### **3.2.9 Nigeria's National Agenda 21**

In line with the Global Agenda 21, the Nigeria's National Agenda 21 identifies as major priorities the alleviation of poverty, promotion of afforestation programme particularly in the semi-arid zone, the combating of desertification and the mitigation of the effects of drought. This is essentially designed to integrate environment and development, which seeks to attain sustainable development. Its main focus is on how to redress the major existing environmental problems. Other priorities include the control of soil erosion, the rational use and exploitation of mineral resources, the protection and management of water resources, conservation of biodiversity, sustainable human settlements, sustainable agriculture and rural development and emphasized on issues of funding, management of environmental information, forging of viable partnership among stakeholders and the promotion of environmental education and awareness.

### **3.2.10 National Action Programme (NAP) to combat Desertification and Mitigate the Effects of Drought**

In line with article 10 of the UNCCD, Nigeria began the process of NAP preparation in 1998 and finalized it in September 2000 using a participatory approach under the

auspices of the National Coordinating Committee on Desertification Control (NCCDC). The NAP was subsequently adopted in June 2001 and is therefore the key operational tool for the implementation of the Convention in Nigeria. Many of the on-going and planned activities discussed in section 4.0 constitute part of the implementation of the NAP.

### **3.3 Legal Framework**

Prior to the coming into force of the UN Convention to Combat Desertification, certain national and state Laws and regulations, which relate directly or indirectly to desertification control or related matters have been in force in Nigeria. In many situations, these Laws contain provisions that address the causes of desertification such as deforestation, over-exploitation of natural resources, inappropriate agricultural practices, bush burning, etc. The relevant laws and regulations are described below:

#### **3.3.1 Federal Environmental Protection Agency (FEPA) Decree**

At the national level, the Defunct Federal Environmental Protection Agency (FEPA) was established pursuant to Decree No. 58 of 1988 as amended by Decree No 59 of 1992 and as further amended by Decree No. 14 of 1999. The Decree placed on FEPA the overall responsibility for the protection and development of the environment and biodiversity conservation and sustainable development of Nigeria's natural resources in general. The Agency was also empowered to prepare a comprehensive national policy on environment and conservation of natural resources, including procedure for environmental impact assessment for all development projects. Although FEPA was subsumed into the newly created Federal Ministry of Environment in 1999, the Decree is yet to be amended to reflect the wider roles assigned to the Federal Ministry of Environment.

#### **3.3.2 National Parks Decree, 1991**

The Law established the 8 National Parks in the country and a Board for the National Parks Service. By virtue of the provisions of the Decree, the National Parks Service is empowered to carry out in-situ conservation of both fauna and flora. Two of the National Parks, the Yankari National Park and the Lake Chad Basin National Park are located in the Sudano-Sahelia savanna ecological zone of Nigeria. By virtue of their location, these parks are involved in activities relating to desertification control especially through conservation activities in the parks including the buffer zones and such activities assist in checking the menace of desertification.

#### **3.3.3 Environmental Impact Assessment (EIA) Decree86, 1992**

The EIA Decree provides stipulate that all developmental projects should, from the onset, undertake environmental impact assessment to determine the possible environmental effects of the proposed project before the project is commissioned. Among the types of projects covered by the provisions of this Law are agricultural and natural resources

projects. Some of the projects are subject to mandatory environmental impact assessment and listed in the mandatory study list.

Environmental Impact Assessment is mandatory for all agricultural projects involving 50 hectares and above. For other projects less than that hectarage, the project proponent shall apply to FEPA for scoping and screening of the project so as to ascertain the level of EIA required or whether or not EIA is required at all. One of the aims of the EIA process on agricultural projects is to avoid embarking on indiscriminate activities such as uncontrolled clearing of forest, removal of topsoil, indiscriminate bush burning, felling of trees etc. that might propel desertification. The Federal Ministry of Environment has now published five sectoral guidelines on EIA. These are on Agriculture and Rural Development, Mining of Solid Minerals, Infrastructures, Manufacturing/Industries as well as Oil & Gas.

### **3.3.4 Endangered Species (Control of International Trade and Traffic in Fauna and Flora) Decree, 1985**

The objective of the Decree is to protect the species of wild animals and plants considered to be endangered. The relevance of this Decree is the fact that there are reports that certain species of plants and wild animals considered to be endangered are prevalent in the Sahel and savannah ecological zones prone to desertification. Consequently, the implementation of the provisions of the Decree would assist in the protection of plants and animal species, which invariably contribute to desertification control. Regrettably, one of the drawbacks of the Decree is that no plant is currently listed in the Endangered Species Decree. The provisions of the Law relating to penalties are obsolete and some are laden with implementation problems. Arrangement is being made to undertake a systematic review of the Law to adequately take care of the lapses.

### **3.3.5 Land Use Decree, 1978**

By virtue of the provisions of the Land Use Decree, all lands located in the territory of each State are vested in the Governor of the State to be held in trust for the benefit of the citizens. Although the Land Use Act does not mention any specific matter relating to desertification, the fact that the consent of the Governor is required as a prerequisite to alienation of any right to the landed property is a clear indication that the Government can control the use of the land through the provisions of the Law. The Governor (where the land is in urban area) or the Local Government Authority (where the land is in rural area) may refuse to grant consent for the use of land that is fragile or that may be prone to desertification. However, a major drawback of the decree is that it does not give enough incentives to land users to make long-term investments on the land through afforestation and soil conservation. These lapses will be addressed in the revised decree in due course.

### **3.3.6 National Water Resources Decree 101, 1993**

The National Water Resources Decree includes provisions to address the inappropriate management of water resources so as to protect the vital resource and thus assist in desertification control.

### **3.3.7 State Laws and Regulations**

At the state level, there are series of forestry, agricultural and wildlife laws as well as bush burning and grazing reserve regulations. These categories of laws are directed at controlling the notable causes of desertification earlier enumerated. The most significant of these laws relevant to desertification control are the Forestry Laws most of which, derive their validity from the old Northern Region Forestry Law. Such laws empower each state to manage its forest estates and grazing reserves as well as reforest their desertified areas. Nevertheless, most of the State Laws especially the Forestry laws are outdated and require review. The lapses in the Laws include weak penalty provisions. The distribution of forest reserves in Nigeria as a whole and in the semi-arid and arid northern Nigeria is presented in Annexes 5 and 6 respectively.

### **3.3.8 Energy Commission of Nigeria Decree No. 62, 1979**

The Energy Commission of Nigeria (ECN) Decree, first promulgated in 1979, and further amended in 1988 and 1989, charged the Energy Commission with responsibility for the strategic planning and co-ordination of national policies in the field of energy, in all its ramifications. The Commission has as Chairman, the President and Commander in Chief of Armed Forces, and includes the Ministers of Finance, National Planning, Petroleum Resources, Power and Steel, Defence, Science and Technology, Agriculture, Health, Education, Transport, Aviation and Foreign Affairs as members, with the Director-General, ECN as secretary. There is need to amend the Decree to include the ministers of the newly created Ministries of Environment and Solid Minerals as members.

## **3.4 Institutional Framework**

Several institutional arrangements have been put in place in the country for management of matters relating to desertification even before the advent of the CCD. Some of the institutions are policy-making bodies while some are actually involved in implementation of deliberate government policies and projects to prevent and mitigate the menace of desertification.

### **3.4.1 Federal Ministry of Environment**

Informed by the need to bring all Federal agencies, Departments and Units under one organisation, so as to strengthen its efforts in providing a sustainable and healthy environment to the people of the country, the new civilian administration established the Federal Ministry of Environment in 1999. The new Ministry consists of the following components:

- The defunct Federal Environmental Protection Agency;

- Department of Forestry from Federal Ministry of Agriculture & Rural Development;
- Department of Soil Erosion and Flood Control from Federal Ministry of Water Resources;
- Environmental Impact Assessment Division of the Federal Ministry of Works and Housing;
- Environmental Health Division of the Federal Ministry of Health; and
- National Parks Service from the Federal Ministry of Agriculture and Rural Development.

The primary mandate of the Ministry includes, among others, the responsibilities on environmental protection, biodiversity and natural resources conservation including policy matters relating to desertification control and is also Focal Point for the CCD in Nigeria. The Ministry also co-ordinates annual Tree Planting Campaigns throughout the country and implements projects on afforestation, wood lot plantations, plant nursery, etc. as measures towards combating deforestation and desertification.

A Forestry Management Co-ordinating Committee (FORMECU) was established in 1987 as an organ of the Department of Forestry in the then Federal Ministry of Agriculture and Natural Resources, now Federal Ministry of Environment. Its primary mandate is the co-ordination and monitoring of the implementation of Forestry II Programme, which consists of afforestation, reforestation and desertification control projects. Also established, is an Afforestation Projects Co-ordinating Unit (APCU) primarily to implement afforestation projects in the Sahel and the Guinea Savannah regions of the country with technical assistance from the World Bank and the African Development Bank (ADB).

The National Parks Service was established to manage all the 8 National Parks in the country. Its responsibilities directly or indirectly aid desertification control activities especially as the success of the in-situ conservation activities is anchored on conservation of forestry ecosystems, which serve as habitats to the various animal species being protected in the Parks.

#### **3.4.2 Federal Ministry of Agriculture and Rural Development**

The Federal Ministry of Agriculture and Rural Development has the primary responsibility of developing the agricultural sector as well as land management. The Ministry carries out this in consultation with its sister Ministries of Agriculture & Natural Resources at both States and Local Government levels.

#### **3.4.3 Federal Ministry of Water Resources**

The Federal Ministry of Water Resources is responsible, inter-alia, for management of water resources generally in the country. Since water is very crucial to the phenomenon of desertification, the Ministry in collaboration with relevant line ministries and agencies

embark on programmes and projects on conservation and management of marine, fresh water, and underground water resources.

There are 12 River Basin Development Authorities in the Country established by Law to capture, store and distribute water resources for irrigation, fishing and other agricultural purposes. For instance, the Sokoto/Rima and the Hadejia/Jama're River Basin Authorities located in the Sahel and semi-arid areas of the country are playing prominent roles in combating desertification especially through irrigation activities. The River Basin Development Authorities are under the supervision of the Federal Ministry of Water Resources.

#### ***3.4.4 State Institutions and Organs***

##### ***3.4.4.1 State Ministries***

The primary institutions that are charged with the responsibilities for combating desertification and mitigating the effects of drought at the State level are the Ministries of Environment and Agriculture & Natural Resources.

##### ***3.4.4.2 State Environmental Protection Agencies (SEPAs)***

In each of the 36 States and the Federal Capital Territory, there is a State Environmental Protection Agency (SEPA) charged with the responsibility of protection of the environment and biodiversity conservation. The State Environmental Protection Agencies and the State Ministries of Agriculture and Natural Resources in the frontline states where desertification has been documented are members of the NCCDC. As part of the Public Awareness Master Plans prepared by each SEPA in the country, environmental awareness issues on desertification are prominent in the master plans of the 10 frontline States. The SEPAs also co-ordinate the establishment and operation of Environmental Conservation Clubs in the Secondary schools and Tertiary institutions. The activities of the Conservation Clubs include vigorous environmental awareness campaigns at the grass root level, tree planting programmes, environmental education, etc.

#### ***3.4.5 Research Institutes***

##### ***3.4.5.1 Centre for Arid Zone Studies (University of Maiduguri)***

The Centre for Arid Zone Studies (CAZS) was established in 1986 to undertake studies and research on the problems prevalent in the Sahel and other semi-arid areas of the country and design remediation measures and mechanism to combat the problems. Two of such problems prominent in the affected ecological zones are drought and desertification. The Centre, which is located in the centre of the Sahel ecological zone of the country, has been designated as the implementation institution of the UNCCD. Consequently, the Federal Ministry of Environment maintains a Linkage Centre on Drought and Desertification based at CAZS. The Linkage Centre has developed pilot programmes on combating desertification. Given adequate financial and technical



assistance the Centre can substantially provide the required technical assistance to the various agencies and bodies involved in implementing programmes and projects on desertification control.

#### ***3.4.5.2 Centres for Energy Research and Development***

There are four Centres for Energy Research and Development, supervised by the Energy Commission of Nigeria. The National Centre for Energy Research and Development located at the University of Nigeria, Nsukka and the Sokoto Energy Research Centre at the Usmanu Danfodio University, Sokoto are involved in renewable energy technology research, development, training and dissemination. The other two, namely, Centre for Energy Research and Training at Ahmadu Bello University Zaria and Centre for Energy Research and Development at Obafemi Awolowo University, Ile-Ife, carry out research in nuclear energy.

Of immediate relevance to desertification control are the renewable energy technologies, which have been developed and are being disseminated by the Energy Commission and the Energy Centres. These include solar-photovoltaic and wind power generators for village lighting, water pumping and rural health centres. Others solar power cookers, biogas generators and stoves, improved woodstoves, fine particle biomass briquettes and stoves, carbonised or briquetted coal and coal stoves. These are for utilization as alternatives to the prevalent wood stoves. The technologies are designed to improve the lives of the population in the affected communities, solve their energy supply problems, support the policy of discouraging the use of fuelwood and hence reduce the pressure on the forest resources in the desertification zones.

#### ***3.4.6 Energy Commission of Nigeria***

The Energy Commission of Nigeria became established and functional in 1989. it is an apex planning and policy co-ordinating agency of government, in the energy sector and was established to ensure an integrated and co-ordinating planning and policy provision for the sector as a whole. In addition, the Commission, among other functions, is to:

- a) serve as a centre for solving any inter-related technical problems that may arise in the implementation of any policy relating to the field of energy;
- b) serve as a centre for gathering and dissemination of information relating to national policy in the field of energy development;
- c) lay down guidelines on the utilization of energy types for specific purposes in a prescribed sequence;
- d) recommend for exploitation any new source of energy as and when considered necessary.

### ***3.4.7 Civil Society Organisations***

A number of civil society organisations including local and international NGOs and CBOs have been involved in matters relating to desertification control especially on public awareness and environmental education, ecological restoration and habitat protection. Some of these NGOs and CBOs include Nigerian Environmental Study Action Team (NEST), Nigerian Conservation Foundation (NCF), Savannah Watch, Savannah Conservation as well as various associations of women and farmers.

A brief outline of the activities of two of the NGOs is presented below:

#### ***3.4.7.1 Nigerian Conservation Foundation (NCF)***

The NCF is a premier NGO founded in 1982 with the following objectives:

- to raise public awareness on conservation matters;
- to encourage and mobilize funds for conservation research and projects; and
- to protect threatened species and habitats.

The NCF has been assisting with the improvement of the Nigerian environment through the conservation of existing forest resources and improvement of woodstoves and development/popularisation of alternative sources to fuelwood to enhance more efficient utilization of forest resources.

#### ***3.4.7.2 The Nigerian Environment Study/Action Team***

The NEST was founded in 1987 with the primary objective of collating and disseminating information on the state of the Nigerian environment. The Organization makes use of case studies of environmental problems as a basis for mobilizing public opinion against environmental abuse and is a major group for Government on all issues relating to the environment. Furthermore, NEST is currently coordinating the activities of all English-speaking West African NGOs (RIOD) involved in desertification issues.

## **3.5 Co-operation with Bilateral and Multilateral Institutions**

Nigeria is involved in a number of bilateral and multilateral relations, which directly or indirectly relate to desertification control. These include the following:

- Secretariat of UNCCD
- Lake Chad Basin Commission (LCBC)
- Nigeria – Niger Joint Commission for Co-operation (NNJCC)

- African Ministerial Conference on Environment (AMCEN)
- Permanent Inter-State Committee on Drought Control in the Sahel (CILSS)
- Economic Community for West African States (ECOWAS)
- United States Agency for International Development (USAID)
- United Nations Educational, Scientific and Cultural Organization (UNESCO)
- Japanese International Cooperation Agency (JICA)
- Canadian International Development Agency (CIDA)

The Country has also enjoyed some form of financial and technical assistance from international agencies and NGOs on matters relating to desertification control, some of which include:

- The World Bank
- African Development Bank (ADB)
- United Nations Development Programme (UNDP)
- IUCN - The World Conservation Union
- World Wide Fund for Nature (WWF)
- Royal Society for Protection of Birds (RSPB)
- Canadian International Development Agency (CIDA)
- Japanese International Cooperation Agency (JICA)
- United Nations Educational and Scientific Cooperation (UNESCO)

## 4.0 ON-GOING AND PLANNED IMPLEMENTATION MEASURES

There are some on-going and planned interventions that are geared towards desertification control in Nigeria. These are measures to alleviate poverty, conserve biodiversity, restore degraded lands, and promote desertification awareness activities and environmental education programme. Other measures include the development of an environmental information system, conducting research and surveys, promoting energy efficiency and renewable energy technologies, smokeless coal briquettes, increased access to kerosene and LPG and their stoves, institutional strengthening and capacity building measures.

### 4.1 On-going Measures

The following on-going programmes and activities, which address different aspects of the NAP to combat desertification, are relevant to the desertification control in Nigeria:

#### 4.1.1 National Poverty Eradication Programme (NAPEP)

The thrust of current government policy in the action against poverty is to enable the poor and more vulnerable sections of society living in the affected areas to achieve sustainable livelihoods. The approach is to economically empower communities, families and individuals, particularly those living in desert prone areas through a sustained, well co-ordinated and comprehensive programme of poverty alleviation.

With the realisation that poverty reduction and promotion of alternative livelihoods constitute, an effective intervention for all for all environmental problems including drought and desertification (Article 10, Section 4 of UNCCD and Section 6.2 of the NAP), the Federal Executive Council of Nigeria, at its meeting of January 4<sup>th</sup> 2000, approved the establishment of the *National Poverty Eradication Council* to formulate policies and coordinate activities of all national eradication programmes and initiatives. The NAPEP, which is chaired by the President, has the Minister of Environment and other line Ministries as members. A national coordinating committee with members from environment line ministries/agencies and NGOs was established to implement and execute the directives and policy initiatives of NAPEP. Similar institutional structures have been set up in all the 36 states of the country and the Federal Capital Territory, Abuja.

The major schemes under NAPEP are:

- Youth Empowerment Scheme (YES);
- Rural Infra-structural Development Scheme (RIDS);
- Social Welfare Services Schemes (SOWES); and
- Natural Resources Development and Conservation Scheme (NRDCS).

YES deals with capacity acquisition, mandatory attachment, productivity improvement, credit delivery, technology development and enterprise promotion, and RIDS deals with the provision of potable and irrigation water, transport (rural and urban), rural energy and power supply. SOWES deals with special education, primary health care services, establishment and maintenance of recreational centres, public awareness facilities, youth and students hostels development, environmental protection facilities, food security provisions, agricultural inputs provisions, micro and macro credit delivery, rural telecommunication facilities, provision of mass transit, maintenance of culture. On the other hand, NRDCS deals with harnessing of the agricultural, water, solid, mineral resources, conservation of land and space (beaches, reclaimed land etc.), particularly for the convenient and effective utilization of small-scale operators and the immediate community.

#### **4.1.2 Biodiversity Conservation and Restoration Measures**

In view of the synergy between the control of desertification and the conservation of biodiversity, government has taken positive steps to conserve the highly threatened plant and animal species, which are still occurring in desert prone areas. Consequently, there are on-going botanical and zoological survey works as well as the establishment of gene banks. Unique wetlands occurring within the semiarid zone of Nigeria have been constituted into special protected areas as a bulwark against desertification. Some on-going projects in this respect include:

##### ***4.1.2.1 Herbal Heritage Centres***

Local communities are facilitated by the Federal Ministry of Environment to own herbal gardens/farms to conserve medicinal plants. Plants for cultural upliftment (ceremonies, festivals) and that generate income. Biodiversity is maintained through in-situ conservation. The gardens are fenced and protected from annual bush fires. The communities control the harvesting of plants.

##### ***4.1.2.2 Rehabilitation of Degraded/Protected areas***

The designated protected areas by government reserves, games reserves and sanctuaries that have been degraded by graziers, loggers and farmers are replanted through buffer strips in selected sites. The aim is to re-introduce plants that were originally in the sites and to enrich the vegetation.

##### ***4.1.2.3 Watershed Management***

Our watersheds have been severely affected by the destructive influence of climatically and human induced environmental hazards. The environmental degradation hazards manifest in the form of soil erosion, flood, drought wetlands eutrophication and desertification. The project is on going and nation wide and involves taking stock; planning, monitoring and ensuring integrated management of nations watersheds. These on-going projects constitute part of the implementation of the activities proposed for the sub-theme “environmental rehabilitation, regeneration and conservation” under section 6.0 (specifically matrix 6.1) of the country’s NAP. It is also worth mentioning that the

project on “Herbal Heritage Centres” is very much in line with the promotion of traditional knowledge advocated by the Committee on Science and Technology (CST) of the Conference of Parties (COP).

#### ***4.1.2.4 Wetland Management***

Wetlands are very productive ecosystems and the concept of wise use has been the focal issues to the Ramsar Convention. The whole idea is to sensitise the different tier of government and the grassroots communities on the need for involvement of all on the wise use of natural resources that abound in the states and improving the livelihood of the grass roots.

#### ***4.1.2.5 Rehabilitation of Degraded Mine Areas***

Areas where solid minerals have been exploited through open cast method are being rehabilitated so that appropriate species can be re-introduced to make the sites suitable for agricultural production and also to check soil erosion.

These on-going projects constitute part of the implementation of the activities proposed for the sub-theme “Environmental Rehabilitation, Regeneration and Conservation” under Section 6.0 (specifically matrix 6.1) of the country’s NAP. It should also be mentioned that the project on “Herbal Heritage Centres” is in line with the promotion of traditional knowledge advocated by the Committee on Science and Technology (CST).

### **4.1.3 Environmental Assessment, Monitoring and Research**

This is an important activity in our NAP to combat desertification. Consequently, Nigerian has embarked an environmental assessment and monitoring programme, which has as one of its objectives to help determine the trends in desertification processes in the country. Several Geographic Information Systems (GIS) have been set up to enable increased capacity for monitoring the country’s natural resources while soil erosion monitoring posts have also been established. Also, a surface and ground water monitoring programme whose objective is to monitor and study the effect of ground water exploitation in flood plains of the semi-arid areas has commenced. This programme also seeks to ascertain the pollution potentials of the saturated ground water zone due to irrigation.

Other activities related to water resources assessment in the arid zone include an inventory of water resources facility as part of the National water resources master plan preparation, hydrological mapping, and bore hole inventory survey. Furthermore, Nigeria has updated the land-use and regeneration map of the country using satellite data and has established Forestry Resources Information Centre fully equipped with remote sensing and GIS facilities. This has also been replicated in Federal Ministry of Environment (FMENV) to monitor desertification and pollution issues. Research activities are on going through the FMENV Linkage Programme on Drought and Desertification located at the Centre for Arid Zone Studies, University of Maiduguri. This Linkage Centre is the Country’s CCD/NAP implementation centre.

#### **4.1.4 Environmental Information System**

As a result of the serious dearth of data and very weak resource planning base, Government established a national forestry data bank and information centre to serve as focal point for the development of information exchange system to enhance inter-agency co-operation. Furthermore, the FMENV has also established a Data Management and Information unit, which is connected to sectoral nodes dealing with forestry, natural resources, and land and water resources conservation. An Environmental Reference Library has also been established while Nigeria is a member of the UNDP global information exchange network (INFOTERRA).

#### **4.1.5 Promotion of Environmentally Friendly Energy Practice**

The Energy Commission of Nigeria is currently implementing a number of environmentally alternatively energy strategies. Notable among these are the ***World Solar Programme Projects (1996-2005)***. This is an initiative of the UNESCO under which each participating country develops and implements a number of “High Priority National Renewable Energy Projects”, all of which are directly or indirectly beneficial to the environment. The country has eight such projects, among which are:

- Integrated Rural Energy Supply (Solar Villages);
- Development and Dissemination of biogas and bio-fertilizer technology;
- Rural Health Care Delivery and Potable Water Supply using solar PV;
- Establishment and operation of fuel woodlots.

The implementation of these projects is on going. For instance, the Integrated Rural Energy Supply (Solar Villages) is being implemented at Zakka village in Safana Local Government Area of Katsina State. It involves a study of the socio-economic activities in the selected community, their energy needs and the renewable energy resources available in the community. A set of renewable energy systems are then designed and installed to meet the identified needs. For Zakka, the design of the energy system has been completed and installation will commence as soon as resources are provided. This and the other WSP projects are identified for replication in all the States of the federation as examples for other agencies as rural development initiatives. Other projects include the dissemination of solar cookers among village families in Sokoto State and training workshops on the fabrication of improved wood stoves.

#### **4.1.6 Capacity Building and Institutional Measures**

Government has co-operated with international organisations in capacity building and institutional strengthening to ensure manpower development for desertification control in the country. Capacity building measures relate to the formulation of environmental policies, legislation and enforcement, increased awareness of desertification issues, preparation of sustainable development strategies and action plans as well as training of federal and states staff. The defunct FEPA has established an Environmental Enforcement Training Centre in addition to other training centres on soil conservation

and afforestation, which have now been transferred to the Federal Ministry of Environment. Institutional reforms have been carried out to improve the performance of line ministries and agencies.

#### **4.1.7 Environmental Education**

In August 1988 Nigeria organised the first Conservation Education Conference at Yankari Game Reserve. The objective of the conference was to formulate and plan a National Conservation Education Strategy for Nigeria and both the Joint Consultative Committee on Education (JCCE) and the National Council on Education (NCE) in 1992 approved the document. The document proposed the Establishment of conservation education committees at all levels of government and introduced community participatory and schools programme. Another workshop on environmental awareness aimed at drawing up a national master plan to guide the promotion of environmental awareness in the country was held in 1997. The workshop adopted a draft National Environmental Awareness Master plan. This is to enhance environmental awareness and education and also provide the way forward to sustainable development in Nigeria.

More specifically, Nigeria has made efforts in the field of Desertification Awareness and Environmental Education to combat desertification. Among the efforts made include:

- introduction of Environmental Education in formal and non-formal education sectors both at primary, secondary and tertiary institutions;
- setting up of Conservation Education Clubs and Societies both in schools, colleges, universities and NGOs;
- establishment of a Committee on alternatives to fuelwood;
- development of a National Conservation Education Strategy (1988);
- preparation of a National Environmental Education Master Plan (1998); and
- production of newsletters, monographs and leaflets on desertification issues.

#### **4.1.8 On-Farm Conservation Project**

In line with the provisions of our National Agenda 21, Nigeria has embarked on soil conservation measures with the aim of curtailing soil degradation, either by water erosion, wind erosion or the intensive activities of man in the areas of deforestation. In the semi-arid areas, sheet erosion control trials are being established to monitor the occurrence, intensity and mode of control of sheet erosion on farmlands. Grass bunds, wicker works and use vertiver grass as well as other agronomic measures are being introduced.



Under this programme, farmers are being taught and encouraged to adopt simple, efficient and cost-effective on-farm soil conservation measures. These include the use of vetiver grass, mulching, contour ploughing, crop rotation, terracing and agro-forestry among others. The measures ensure that soils are not left bare and thus protected against agents of degradation.

#### **4.1.9 Soil Map Project**

Under this project, a reconnaissance soil map of Nigeria was produced to serve as a guide and an input into the development of land capability classification for the country. Currently, the Federal Ministry of Agriculture & Rural Development is holding discussions with the United States Department of Agriculture on the establishment of a National Survey Centre. Furthermore, the second phase of the Soil Map Project that will produce the detailed soil map of Nigeria is expected to take-off soon. It is also expected that the project on development of land capability classification for the country will soon commence.

## **4.2 Planned Programmes and Activities**

Given the magnitude and extent of desertification in the country, Government future programmes will focus on arresting desertification by protecting desert prone areas; rehabilitate affected areas and institutionalise drought-ameliorating measures. This will be achieved through, among others:

### **4.2.1 Shelterbelt Development**

In order to check the southward spread of the desert conditions and increase vegetative cover in the drylands of the country, Government has approved the establishment of a shelterbelt across the extreme strip of the northern parts of the country (i.e. from the Sokoto basin in the Northwest to the Lake Chad Basin in the Northeast). The project, which is estimated to cost about eleven billion naira (about US \$95.6m) and is spread over a period of five years, has taken-off with the on-going establishment of 51 standard nursery centres in the northern States and Abuja. The bulk of the financial resources are expected to come from the Ecological Fund Office in the Presidency.

### **4.2.2 Capacity Building**

As part of the efforts to combat desertification and mitigate the effects of drought, Government is working on a master plan to further strengthen its on-going efforts in building the capacity of various institutions working in this area. This initiative will be geared towards the protection, development and sustainable management of the country's natural resources endowment, particularly in the drylands.

### **4.2.3 Development of Drought Early Warning System**

A proposal for the development of a comprehensive early warning system has been submitted to the Ecological Fund Office for funding. It is expected that this project will facilitate proactive management of drought thereby complementing the efforts of Federal Department of Meteorology.

### **4.2.4 Alternatives to Fuelwood**

A major threat to the afforestation and reforestation efforts is the cutting down of the trees and plants before they even reach the stage of harvesting. Under this project, therefore, efforts will be concentrated of providing, in a sustainable way, alternatives to fuelwood, which is the major cooking fuel in the dryland zones. Energy related projects in the area would also aim at improving the lives of the people and empowering them economically, while also paying particular attention to gender needs. Consequently, the following activity have been lined out for execution:

- Continuation of the World Solar Programme projects, each of which contains components of:
  - Energy supply
  - Capacity building on the operation and fabrication of renewable energy devices and systems
  - Renewable energy technology dissemination
- Establishment of facilities for the commercial manufacture of solar photovoltaic modules, solar cookers, bio-digesters, and other valuable energy devices
- Implementation of energy component of the recommendations in the Report of the Inter-Ministerial Committee on Combating Desertification and Deforestation (submitted to Mr. President in August, 2000), which includes:
  - Construction of 20 nos. 5,000 mt/yr small-scale coal briquetting plant,
  - Construction of large scale coal briquetting facility
  - Increasing the supply and distribution of liquefied petroleum gas (LPG) and kerosene and promoting the supply of LPG cylinders, cookers and kerosene stoves.

## 5.0 CONSULTATIVE AND PARTICIPATORY PROCESS

A key success to implementing the CCD is the preparation and implementation of action programmes at National, Sub-regional and Regional levels through partnership and participatory processes. The preparation of Action Programmes requires the participation of Stakeholder including the farmers, policy makers and environment NGOs and CBOs. In general, the NGOs, particularly NEST and NCF have been contributing immensely towards fighting desertification in Nigeria. Although limited by funding capabilities, the NGOs are succeeding in raising public awareness on the ecological problems as well as lobbying and campaigning against policies and projects that could have adverse ecological and socio-economic impacts.

In recognition of the need for the involvement of all stakeholders in combating desertification, the implementation of NAP is being carried out under the auspices of the national coordinating body, the National Coordinating Committee on Desertification Control (NCCDC). The membership of the Committee is drawn from the following:

- Key Federal Ministries, which include Agriculture and Rural Development, Environment, Aviation, Foreign Affairs, Water Resources and Women Affairs & Youth Development.
- Energy Commission of Nigeria;
- National Institute for Social and Economic Research;
- FMENV Linkage Center on drought and desertification, CAZS, University of Maiduguri;
- National Planning Commission
- Ecological Funds Office
- The 11 desertification frontline States
- Key environmental NGOs including Nigeria Environmental Action/Study Team, and Hadejia-Nguru Wetlands Project

In appreciation of the fact that Nigeria operates a three-tier system of Government, plans are underway to prepare States Action programmes to serve as a framework for combating desertification at State level. It is also envisaged that similar programmes will be developed at the Local Government level in the affected region to ensure the greater grassroots involvement in combating desertification.

Government collaborates with relevant NGOs, CBOs, Organized Private Sector (OPS), and Community leaders, the academic and research institutions. In particular, in the past few years many fora have been organized to raise the level of awareness about the CCD

with the aim of ensuring the participation of all stakeholders in Planning, execution and monitoring of desertification control programmes. These fora, among others, include:

- Organization of Policy Makers/NGOs Fora (e.g. in Kano, November, 1997);
- Mobilizing Non Governmental Organizations Towards the Implementation of the CCD for English Speaking West Africa Countries (March, 1998); and
- World Environment Days Celebrations.

The overall impact of these consultative efforts is that more people are now concerned with the need to address the menace of desertification. In addition, there is a pool of knowledge about the traditional coping mechanisms of the people in the affected areas. In addition to this, Government has been having consultations at the sub-regional and regional levels, such as Economic Community of West African States (ECOWAS), Permanent Inter-State Committee for Drought Control in the Sahel (CILSS), Lake Chad Basin Commission (LCBC), Nigeria-Niger Joint Commission for Cooperation (NNJCC), etc. Similar consultations are on going with multi-lateral and bilateral organizations such as the World Bank, UNDP, the Department for International Development of the UK (DFID), the United States Government (USAID) etc.

## **6.0 FUNDING AND TECHNICAL ASSISTANCE**

### **6.1 Sources of Funds**

The Federal Ministry of Environment is the key institution responsible for the implementation of desertification control programme in the country. The Ministry is responsible for policy formulation, coordination and environmental assessment. These responsibilities are carried out in close collaboration with line ministries and agencies, However, these Institutions derive their funding from annual grants-in-aid through the Federal Ministry of Finance, special grants from the Ecological Fund Office and residual funding assistance either in cash or in kind from bilateral and multilateral organizations.

#### **6.1.1 Budgetary allocations**

Funds are released only for projects that have been admitted in the 3-yearly National Rolling Plan. Desertification control programmes have been admitted in the National Rolling Plan since its inception in 1975. The allocations for desertification control are channeled through projects in the Federal Ministry of Environment.

#### **6.1.2 Ecological Fund**

This is a special fund set aside by the Federal Government in 1981 for the amelioration of ecological problems. Originally, it was 1% of the Federation Account but was later increased to 2%. Funds have been released from this special vote to finance desertification and drought relief projects either through Federal Institutions or State Governments. It is an extra-budgetary source of funding addressed to mitigating environmental degradation. The Secretariat of the Fund is located in the Presidency and is responsible for processing all requests for funds, documentation of all disbursement, monitoring and coordination and general administration of the funds. A total sum of 7.3 billion Naira (US 64 million Dollars) was disbursed by the Ecological Fund Office to the 11-desertification frontline lines between 1999 and 2001.

#### **6.1.3 Bilateral and Multilateral Sources**

These organizations make their funds available to projects through the National Planning Commission as grants and to the Federal Ministry of Finance in case of loans. The funds are meant to finance various aspects of desertification control including policy, afforestation, poverty alleviation, awareness campaigns and other socio-economic activities. The key institutions financing desertification control in Nigeria include World Bank, European Economic Community, African Development Bank, and the Secretariat to the Convention to Combat Desertification and the United Nations Development Programme.

## **6.2 Major Projects Funded from Annual Budgetary Allocations**

### **6.2.1 Arid Zone Afforestation Project**

The arid zone afforestation programme is on going in the entire arid zone States of Sokoto, Katsina, Kebbi, Bauchi, Zamfara, Yobe, Borno, Kano, Gombe and Jigawa. The main activities are raising of seedlings and establishment of shelterbelts, woodlots, windbreaks and homestead gardens. Between 1998 and 1999 over 8 million seedlings have been raised.

### **6.2.2 National Tree Planting Campaign Programme**

This is an annual programme used to sensitize and mobilize the public to imbibe the culture of tree planting in the country. The programme has also aroused the interest of the public in establishment of orchards, protection of the natural vegetation from fire and popularizing the use of improved stoves and other wood saving devices among the people.

### **6.2.3 Model Village Development Project**

This is a community based integrated project targeted at improving the socio-economic condition of the community. The objective is to establish, with field evidence that given adequate control by way of appropriate education and inputs of materials, financial and intellectual resources and guidance, every community in any given environment, even a desert threatened environment can live and develop in harmony and prosper in a dynamic equilibrium sustainably with that environment.

The major components of this project, among others, are:

- Promotion of renewable energy sources (solar, biogas, etc) as well as fuel efficient woodstoves;
- Conservation of threatened flora species and species that are of special value to the community;
- Waste management;
- Environmental education and creation of public awareness

## **6.3 International Assisted Programmes/Projects**

The drought of the 1970s and 80s in the Sahelian zone of the country led to the breakdown of biological processes, depletion of water supplies, slow growth of trees and loss of livestock and crop production. Government action led to harnessing of Lome funds through the EEC to support three programmes in the drought-affected areas. These are:

### **6.3.1 Katsina State Agricultural and Community Development Project (KSACDP)**

This Programme commenced in 1987 with the objective of combating desertification in Katsina State and with a view to contributing to improvement in agricultural productivity and provides forest resources such as poles and firewood. The programme was funded to the tune of N90 million. The Katsina State Government is currently sustained the project.

### **6.3.2 North East Arid Zone Development Programme (NEAZDP)**

This project, which commenced in 1988, combined sustainable agricultural development with environmental protection and preservation of unique habitats in Yobe and Borno States. The sum of N336 million drawn from Lome III funds was expended on the projects. Although external fund has ceased, the project continues to receive funding from Yobe State Government

### **6.3.3 Sokoto Environment Programme**

The project, which took off in 1989, was funded with N294 million from Lome III funds. It was based on community participation for the purpose of creating environmental awareness and development of basic skills for the rehabilitation of desertified lands. The Sokoto State Government continues to fund the project after the cessation of external funding.

### **6.3.4 World Bank Forestry II Project**

Forestry II programme came into existence in 1987 and ended in June 1996. The programme strengthened the structural base of the forestry sub-sector, stabilized soil/sand dunes and improved the supply of fuelwood, poles and fodder by supporting farm forestry and shelterbelt activities. The programme covered ten states: Sokoto, Zamfara, Kebbi, Jigawa, Yobe, Borno, Katsina, Kano, and Bauchi. The physical achievements include the establishment of 5,566 ha woodlots and 2,083 km of shelterbelts. The programme was funded with US\$95.4 million with the World Bank contributing US\$ 71.0 million (Annex 7)

### **6.3.5 UNDP Assisted National Forestry Action Plan**

The National Forestry Action Programme prepared proposals for programmes for translation into national policies and plans for action in area of Forestry as it relates to agricultural land improvement, fuelwood and wood energy, conservation of tropical ecosystems and industrial strengthening and development.

### **6.3.6 The Hadejia–Nguru Wetlands Conservation Project**

This project, which is managed by the International Union for the Conservation of Nature (IUCN), is located in Nguru, Yobe State. It was established in 1987 to maintain the ecological and economic integrity of the Hadejia- Nguru flood plain. The wetland, which is about 3,500 km<sup>2</sup> in expanse, constitutes a natural barrier to the southern movement of

the desert conditions in its Sahelian environment. The main activities of the Project are research, public awareness and education, preparation of management plans and guidelines, advocacy and promotion of the wise use of the natural resources of the area. The project is currently been restructured to cover the whole of the Komaduogu-Yobe system up to Niger Republic but with special emphasis on the Nigerian side of the basin.

**6.3.7. Jigawa Wetlands Livelihood Project**

This is a community-based project supported by DFID. The main objective is to assist the communities' use the wetland resources in the area sustainably. The design has been completed and the project, which is to be implemented by a consulting firm, is expected to commence in July 2002.

**6.3.8. Lake Chad Basin Integrated Management Project**

The project is targeted at the integrated management of the Lake Chad Basin. It involves the five countries that are members of the Lake Chad Basin Commission (Nigeria, Niger, Cameroon, Chad, and the Central African Republic). The World Bank, UNDP, WWF, and UNEP assist the project. Lake Chad Basin Commission (LCBC) is the implementing Agency.

**6.3.9 Nigeria-Niger Transboundary Ecosystem Management Project**

This UNEP/GEF-Assisted Project is currently at the PDF'B' stage. The thrust of the project is the facilitation of the sustainable use of the transboundary natural resources between Nigeria and Niger.

**6.3.9. CIDA-Assisted Community-Based Afforestation Pilot Project**

This is a community-based pilot project that is expected to give rise to a much bigger project with the assistance of the Canadian International Development Agency (CIDA). Currently, community woodlots are being established in Borno and Cross-River States.

**6.3.10. Promotion of Renewable Energy Resources and Conservation of Threatened Flora Species (Mega-Chad Project)**

This is a UNEP/Belgium funded project that covers four countries (Nigeria, Niger, Cameroon and Chad) within the Lake Chad Basin. This community-based project aims at promoting the use of renewable energy resources (Solar, Biogas), fuel-efficient wood stoves, water-harvesting techniques as well as the conservation of threatened flora species.

**6.3.11 The National Fadama II Project**

This World Bank supported project is a follow-up to the concluded National Fadama project that covered the floodplains in selected States in the arid lands of Nigeria. This follow-up project is now being restructured to cover the whole country. Some of the activities under this project includes:

- Construction of shallow tube wells to increase irrigation potentials
- Conduct of aquifer studies and upgrading of irrigation technologies
- Organization of farmers into the Fadama Users Associations (FUAs) for irrigation management.



## 7.0. GENDER ISSUES

In line with Article 8 (section 2c) of the UNCCD regional implementation annex for Africa and the provisions of our NAP, women are being carried along in all aspects of planning, implementation and monitoring of activities relating to desertification control. The Federal Ministry of Women Affairs and Youth Development is represented in the National Coordinating Committee for Desertification Control (NCCDC) and is always represented on related technical committees and meetings of expert groups.

Recently, the Federal Ministry of Women Affairs and Youth Development in collaboration with the Canadian International Development Agency (CIDA) initiated a project in consultation with the Federal Ministry of Environment. This project focuses on:

- The implementation of the National Women Policy particularly those sections that have environmental concerns.
- The promotion of afforestation efforts among women, e.g. Community woodlots.
- The promotion of alternative energy sources such as kerosene, smokeless coal briquettes, solar energy and biogas as well as the use of fuel-efficient woodstoves.
- Capacity building among women for the development of a realistic and integrated environmental management and emergency response.
- Strengthening of women capacity in the use of appropriate agricultural technologies.
- Enhancement of women capacity in drought management and control.
- Development of strategies to increase women access to dry season farming facilities.
- Demonstration of community-based land and water management practices with special emphasis on poverty reduction and gender equality in natural resources management.
- Strengthening of the capacity of the Federal Ministry of Women Affairs and Youth Development to conduct gender analysis in government and civil society for the purpose of implementing gender-related activities.

## **8.0 IMPLEMENTATION OF THE NATIONAL ACTION PROGRAMME TO COMBAT DESERTIFICATION**

The National Action Programme (NAP) to combat desertification is the operational tool for the implementation of the UNCCD. Consequently, the conception of the on going and planned activities have been guided by the NAP. Even though some achievements have been recorded in the implementation of the activities, a number of problems constraining the implementation process have been identified. The achievements and problems identified are discussed in the following sections.

### **8.1 Achievements**

The on going projects discussed in Chapter 4 constitute part of our efforts to implement the NAP. For example the programme on poverty eradication discussed in section 4.1.1 of this report is fundamental since it addresses the issue of poverty, which is considered as a panacea for desertification control (Article 10, Section 4 of the UNCCD and Section 6.2 of the NAP). Other on going projects like the biodiversity conservation project, capacity building and environmental education initiatives as well as the soil conservation project address some of the activities proposed in our NAP. Among the planned programmes, the Green Belt project (section 4.2.1 of this report) stands out clearly as a bold initiative by the Federal Government to combat desertification.

It is also worth noting the International Cooperation advocated in Article 12 of the UNCCD already at play in the implementation of NAP as evidenced by the numerous internationally assisted projects highlighted in section 6.3 of this report. Furthermore, attention has been given to promotion of traditional knowledge and early warning system based on the decisions of the Committee on Science and Technology (CST) as evidenced by section 4.2.3 of this report, respectively.

### **8.2 Constraints and Suggested Solutions**

The constraints identified in the implementation of the National Action Programme include:

- Inadequate funding;
- Conflicts in Government policies relating to the environment;
- Poor enforcement of environmental laws;
- Obsolete legislation and weak penalties;
- Weak institutional capacity.

The approval of the 5 – 10% of funds accruable to the Ecological Fund Office and the transfer same to the proposed National Desertification Control Fund Federal Government as contained in the NAP will strengthen the capacity of the country in combating desertification and mitigating the effects of drought. This action will send positive signals (regarding our commitment to desertification control) to our development partners and hopefully attract increased donor funding and assistance.

Harmonization and streamlining of government policies relating to Environment with a view to removing areas of conflicts will check lapses and also avoid wastage of efforts and resources. Current penalties for defaulters as contained in some environmental legislation are too weak. There is therefore, the need to make them stiffer so as to make enforcement strategies more effective.

Strengthening further the capacity of relevant Institutions with special emphasis on the focal Ministry (FMENV) requires not only national resources but also financial and technical support from our International Partners and Donor Agencies.

## **9.0 REVIEW OF BENCHMARKS AND INDICATORS**

Nigeria is currently in the process of establishing benchmarks and indicators for developmental projects including desertification control programmes and projects. The National Planning Commission is responsible for monitoring all projects. However, the Commission collaborates with the Federal Ministry of Environment in monitoring environmental projects.

Various Government agencies are engaged in monitoring, on sub-sectoral basis, as part of their responsibilities for the country's developmental efforts. Some of these include the Federal Ministries of Water Resources and Agriculture & Rural Development, the Federal Meteorological Services Department. The benchmarks and indicators to be established will be used for the monitoring and evaluation of projects to be implemented under the National Action Programme to combat desertification.

## 10.0 CONCLUSION

The Nigerian National Report on desertification control contains a synopsis of the state of desertification in the country, historical trends and past national efforts as well as on-going and planned measures for combating the menace of desertification. It has highlighted the gaps in policy formulation and strategies especially the treatment of desertification concern as a sub-sectoral issue rather than an integrated, holistic issue with synergies with other relevant sub-sectors. The report also noted the inability of Government to provide adequate funds for desertification control and emphasize the need for the review and streamlining of legislation targeted at arresting the menace of desertification in the country. Furthermore, the report has highlighted a number of on going and planned projects that address some of the activities proposed for implementation in our National Action Programme.

There is no doubt that some achievements have been recorded in the implementation of the NAP. However, more still need to be done. It is hoped that the increased funding of desertification projects advocated from both budgetary allocation and from the Ecological Fund Office in due course.

The establishment of the proposed National Desertification Commission as the execution arm of the Federal Ministry of Environment will definitely facilitate a more aggressive implementation of the NAP. The financial and technical support from the Secretariat of the UNCCD, as well as our development partners and donor agencies will contribute in no small measure to the NAP implementation process.

# **ANNEXES**

Annex 1: **Distribution Of Vegetation Types in Nigeria**

Vegetation types	Area (Km <sup>2</sup> )	% of land area
Sahel	31,460	3.00
Sudan savanna	342,158	35.00
Guinea savanna	400,168	40.00
Low land rain forest	75,707	8.00
Fresh water swamp	95,372	10.00
Mangrove forest	25,563	3.00
Coastal vegetation	12,782	1.00
Total	983,213	100.00

Source: Sutter (1979)

Annex 2: **Forestry Development Programmes in The Arid And Semi-Arid Zones Of Nigeria 1981 - 1985**

States	Plantation Development (ha)	Natural forest development (ha)	Total (ha)
Bauchi	1,500.00	102,595.00	104,145.00
Borno & Yobe	10,225.00	25,540.00	35,765.00
Kaduna & Katsina			
Kano & Jigawa	32,180.00	33,200.00	66,380.00
Sokoto & Kebbi	57,500.00	94,580.00	152,080.00
	19,000.00	282,280.00	301,280.00

Source: Forth National Plan 1981 - 1985

Annex 3: **Plantations and shelter belts in arid and semi-arid zones as at 1980**

State	Wood lots (ha)	Shelter belts (ha)
Sokoto	6,480	520
Kano	4,442	195
Kaduna	2,653	600
Bauchi	1,191	1,574
Borno	5,149	850

Source: Federal Department of Forestry, Lagos

Annex 4: **Some Achievements of World Bank Afforestation Programme**

Item	Target*	Achievement		Remark**
		Quantity	%	
<u>Seedling Production</u>				
Nurseries (no) – Project	46	125	272	
- Private	-	6055	-	Kano had 28% of total
Seedling production (million)				
- Project	49.2	118.1	240	
- Private	-	12.8	-	Jigawa had 27% of total
<u>Farm Forestry</u>				
Contact farm families ('000)	197	330	168	Jigawa had 23% of total
Foresters clubs/institutions (no)	-	3964	-	Kano had 34% of total
Self-help Group (no)	-	2667	-	Kano had 50% of total
Woodlot established ha				
- Project	-	684	-	Kano had 31% of total
- Private	-	4882	-	Jigawa had 32% of total
Orchard established (ha)	-	1569	-	Sokoto had 39% of total
Road side planting (km)	-	1194	-	Kano had 56% of total
Women in forestry				
Groups formed (no)	-	204	-	
Gardens/woodlots (no)	-	1742	-	Yobe had 66% of total
Improved stoves (no)	-	3513	-	Borno had 36% of total
Media support				
Radio/TV programmes (no)	-	26.7	-	Kano had 26% of total
Postal/stickers ('000)	-	113	-	Kano had 34% of total
Farmers trained ('000)	-	32	-	Jigawa had 79% of total
Shelterbelts established (km)	1718	2083	121	Sokoto had 27% of total
<u>Funding (US\$m)</u>				
State Governments	5.7	7.4	130	Kano had 23% of total
Federal government	2.8	0.9	32	Kano got 33% of total
Internally generated revenue	-	0.1	-	
Communities	4.1	3.8	93	About 94.5m
World Bank	22.7	26.1	80	
Total	45.3	38.3	85	

\*as specified at appraisal and revised at mid-term review

\*\*indicates states highest physical achievements



Annex 5: **Forests Reserve By Vegetation Zones In Nigeria**

Zone	Forest reserve (Km2)	% of total forest reserve
Sahel savanna	2,571	3.00
Sudan savanna	31,247	31.00
Guinea savanna	38,271	39.00
Derived savanna	3,208	3.00
Moist tropical	20,443	20.00
Fresh swamp	256	3.00
Mangrove	522	1.00
<b>Total</b>	<b>96,518</b>	<b>100.00</b>

Source: Sutter (1979)

Annex 6: **Distribution Of Forest Reserves In The Arid And Semi-Arid Zones Of Nigeria**

States	Total land area (Km2)	Area under reserve (Km2)	% of forest reserve
Kaduna & Katsina	69,392.85	8,825.19	
Kano & Jigawa	43,743.94	1,979.79	12.72
Sokoto & Kebbi	91,960.06	20,385.21	4.52
Bauchi	65,487.35	8,083.70	
Borno & Yobe	199,132.17	1,823.50	22.17
			12.34
			4.00

Source: Onochi (1983)

Annex 7: **Forestry II Projecting Financing**

Source	Local Costs (US \$m)	Foreign Costs (US \$m)	Total (US \$m)
The world Bank	33.5	37.5	71.0
Federal Government of Nigeria	4.3	0.0	4.3
State Governments	14.2	0.0	14.2
Community contribution and internally generated revenue	5.9	0.0	5.9
<b>Total</b>	<b>57.5</b>	<b>37.5</b>	<b>95.4</b>

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