



**NIGERIA**

**NATIONAL POLICY ON  
THE ENVIRONMENT  
(REVISED 2016 )**

**ACKNOWLEDGEMENT** (Permanent Secretary, Federal Ministry of Environment)

**FOREWORD** (Honourable Minister of Environment)

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## 1. Introduction

Development will be meaningful if it does not increase a country's vulnerability to environmental impacts. If a nation's environmental foundations are depleted, its economy may well decline, its social fabric may deteriorate, and its political structure may even become destabilized. The environment is, however, **a complex and interactive system** consisting of the atmosphere, land surface and bodies of water, as well as living things. The degradation of an element of the environmental system will have positive or negative feedback effects on the others. For example, human induced increased injection of carbon dioxide into the atmosphere has resulted in global warming with its consequent large variability in climate in the form of extreme weather events that are generating floods (e.g. the 2012 major flood disasters witnessed in more than half of the States of Nigeria) and massive erosion of land. Thus, the environment must be managed in a coherent and integrated manner through the implementation of a well formulated policy framework.

Nigeria formulated its first national policy on the environment in 1991. It was revised in 1999, and seventeen years down the lane, it is due for another revision in order to capture emerging environmental issues and concerns. Thus, the purpose of this National Policy on the Environment is to define a new holistic framework to guide the management of the environment and natural resources of the country. As a framework document, it prescribes sectoral and cross-sectoral strategic policy statements and actions for the management of the country's environment for sustainable development.

In addition to the existing 1991 and 1999 draft policy documents, this Policy derives its strength from the fundamental obligation for the protection of the environment as stated in section 20 of the Constitution of the Federal Republic of Nigeria 1999 which provides that the "State shall protect and improve the environment and safeguard the water, air and land, forest and wild life of Nigeria". In addition, Nigeria is party to several international treaties and conventions governing environmental issues. It is on the combined thrust of these instruments that the National Policy on the Environment rests.

## 2. Situation Analysis

The environment is the life supporting system for human existence and survival and provides much of the physical milieu and the raw materials required for socio-economic progress. Humanity has no choice but to interact with it. Unfortunately, human interaction, natural disaster and climate change are putting unprecedented pressure and impact on the quality of our environmental conditions. Climate change, in particular, is currently one of the most critical issues facing mankind today. It strikes at the very heart of the sustainability of our life, and is compounding human efforts to attain sustainable development. Nigeria is strongly predisposed to severe negative impacts of climate change due to the nature of its economy, weak resilience and low adaptive capacity. Much of the economy is dependent on climate-sensitive resources. For example, the agriculture sector (crop production, livestock and fishery) and forestry which employ up to 70% of the workforce and contributes about 22% of the rebased GDP is very climate sensitive.

If the environment is properly managed, it can be a productive resource to meet our socio-economic and aesthetic needs, not only for today, but also for the future generations. Conversely, if poorly managed, the environment could easily become hazardous and threatening to the country's survival. Where human interaction with the environment results in degradation, it can be a significant source of economic loss and stress upon human societies. By the 1990s, a World Bank report estimated that Nigeria was losing about US\$5.1 billion per annum to environmental degradation, in the face of poor mitigation measures and initiatives.

Nigeria's environment is under increasing threat from human activities and natural disasters. There are already certain ominous problems with the environment and visible scars associated with the destruction of the natural resource base (land, water and air) upon which all life depends are being noted. The country's large population of about 170 million and its rapid growth rate of 2.8 per cent are contributing to its environmental degradation.

The key environmental issues facing Nigeria include land degradation, deforestation, and land, water and air pollution among others. Land is by far the most important resource necessary for subsistence. Simply, put land is that part of the earth's surface that is not covered by water, To this has to be added wetlands which are seasonally or permanently under water. Much of this land is rural, carrying farmlands and vegetation of various types as well as water reservoirs. This portion of the country's land area is the stock from which urban uses are aggressively incurring into to meet growing unbridled non-land use demands. Earth mining for urban development is a major component of this "eating" up the rural land that has evidently been ignored over the years. Left uncontrolled as it is today, future access to rural land for agriculture will be precarious. Effort must therefore be made now to enforce land demarcation for rural especially at the LGA levels. Such land declared as rural would not be allowed to be converted to urban uses of any form. There must also be a watch on idle urban land to control wastages associated with land speculation.

Even the land now under rural use is severely threatened. Much of Nigeria's arable land is being sapped insidiously of its productive potential through overuse, inappropriate technologies and urbanization. Rapid deforestation, resulting from multiple uses of forest resources for human survival (e.g. fuel wood and energy, housing etc.) is a major contributing factor to land degradation. The end result of

deforestation and other agricultural activities, including intensive grazing, and over-cultivation, is severe land degradation.

Fossil fuel use, particularly oil and gas exploration, has aggravated the problem of ecological damage in the Niger Delta. Similarly, indiscriminate and illegal mining for tin and columbite on the Jos Plateau and other mineral resources in many parts of Nigeria have left many areas of the country severely degraded.

There is also a growing concern about air and water pollution, associated with continued urbanization and industrialization in the country. Pollution from oil exploration activities and gas flaring in the Niger Delta remains a source of concern to the government. Oil spills from leaking underground pipelines and storage tanks are a regular occurrence, rendering vast tracts of land and water bodies unproductive in the region. National Oil Spill Detection and Response Agency (NOSDRA) recorded in first half of the year 2007 a total of 424 spill incidents involving 33,799 barrels of oil. In addition, pollution from gas flaring goes on daily because the flare-free deadline set by government has been postponed many times. The resultant heat stress and acid rain continue to degrade the ecosystem. Nigerians in general are increasingly being exposed to the hazards of highly polluted gaseous and dust emissions from industries and vehicles and dangerous industrial wastes that are constantly being discharged into the environment.

Although there have been many national efforts to tackle the problems, Nigeria continues to rank very low in terms of its environmental performance rating. In 2016, the country's Environmental Performance Index (EPI)<sup>1</sup> was 58.27, ranking it as number 133 out of 190 countries surveyed in the world. The low EPI figure puts the country behind many other African countries like Egypt (66.45), South Africa (70.52), Namibia (70.84) and Kenya (62.49). A value of 58.27 indicates that while Nigeria has shown some improvement in the last two years from a low value of 39.20 in 2014, the country still has limited capacity to handle environmental problems and it has not been able to significantly reduce its high rate of air, land and water pollution. When compared with other oil producing countries like Norway (86.90), Canada (86.06), Saudi Arabia (68.63) and Venezuela (76.23), Nigeria has a lot to do to achieve the sustainable development goals (SDGs) that are related to the conservation and sustainable use of its natural resources for meaningful socio-economic development. The situation is being compounded by climate change. The country is strongly predisposed to severe negative impacts of climate change due to its weak resilience and low adaptive capacity.

Addressing these issues and considering the fact that understanding the trade-offs between present and future consumption of resources have to be carefully analyzed, provide the justification for this policy. It also gives the framework to guide the country's efforts to deal with the ever-growing environmental challenges, such as:

- i. *Sustainable management of natural resources:* Environment-unfriendly practices such as large-scale deforestation and land clearing, inappropriate and illegal mining, excessive irrigation water supply, inappropriate use of agrochemicals and inorganic fertilizers, uncontrolled and poor livestock farming practices, gas flaring, have resulted in alteration in vegetation cover, soil degradation, as well as distortion in drainage system, loss of biodiversity, overgrazing and

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<sup>1</sup> The Environmental Performance Index (EPI) ranks countries' performance on high-priority environmental issues in two areas: protection of human health and protection of ecosystems.



disruption of the ecological systems, pollution, increased incidence of disease vectors and the like in many parts of Nigeria.

- ii. *Environmentally sound technology:* The exploitation of natural resources, consumption of energy, production processes and generation of environmental pollution, wastes and degradation depend on the types of technology adopted. The major challenge for the country is to adopt and use environmentally sound technologies (ESTs), whether exogenously or endogenously developed because they will contribute significantly to productivity and the sustainability of resources through renewable-energy generation, pollution control, and waste reduction.
- iii. *Climate change and disaster management:* The effects of the change are already manifesting in increasing extreme climatic events particularly storms, flooding and rising temperatures as well as altered climatic and weather regimes. These are creating many other effects such as declining productivity of rain-fed agriculture and relocation of populations with all its consequences. In the long run all the sectors of the economy could be severely impacted with huge losses including life. This would slow down the pace of development in the country as many economic activities are climate sensitive. There could be shift in the boundaries of ecological belts. The challenge is the promotion of climate compatible development for disaster risk reduction and sustainable development
- iv. *Land degradation and desertification:* Severe land degradation continues to ravage the country, resulting in drastic reduction in the productivity of land resources. Reducing the rate and severity of desertification and reversing land degradation is a key challenge for environmental sustainability and sustainable development of the country.
- v. *Waste management:* Poor waste management that is prevalent in Nigeria is inimical to the sustenance of the environment as well as the overall economic development of the country. Controlling indiscriminate dumping of household and industrial wastes on land, water and air remains a major environmental challenge.
- vi. *Pollution:* Pollution continues to be a major environmental challenge in the country, with significant impact on the well-being of the country's environment and the people.
- vii. *Environmental hazards and disasters:* Despite their devastating impacts on many sectors of the economy and the livelihoods of the people, the management of environmental hazards and disasters remain a major challenge, due generally to inadequate capacity for their effective prediction, mitigation and management.
- viii. *Urban decay:* Nigeria ranks among the most urbanized countries in the world with the rate about 56% in 2015. The pace of urbanization increase has been such that maintenance of modest environmental standards had inevitably lagged behind. The functionality of most urban areas is thus reduced in addition to exerting adverse impacts on households, macro-economic performance and social well-being. This situation poses a major challenge to economic growth and sustainable development.

- ix. *Integrated coastal management:* Nigeria's coastal region suffers degradation from diverse of human activities, particularly oil exploration and exploitation, agricultural and industrial development. Attempts to address critical environmental problems have been mainly piecemeal. The main challenge for the sustainable management of the coastal and marine environment is to put in place an integrated approach that will address the issues.
- x. *Weak environmental governance:* Weak and fragmented environmental governance remains a major bane of environmental sustainability in the country. Many of the institutions dealing with environmental issues have weak capacity and adopt sectoral, rather than integrated, approaches. They are generally under-funded and ineffective in their core functions to have meaningful impact on environmental sustainability. Weak enforcement of laws and weak implementation of policies remains a major issue of concern in Nigeria's environment sector.
- xi. *Inadequate environmental education and awareness:* National efforts to address environmental issues have not been broad-based. But, broad public participation in decision making processes is one of the fundamental preconditions for sustainable development. This will enable many Nigerians to be aware of their role in environmental management and also enhance their access to timely and accurate information on the environment. Sound environmental management has to be based on openness and inclusiveness at all levels. Therefore, it is imperative that environmental education and public awareness is promoted to ensure broad-based environmental management, involving the many and varied stakeholders.
- xii. *Dichotomy between environment and growth, and environment and poverty alleviation:* Environmental issues and concerns are lowly rated in national priorities. The fact, therefore, is that over time environmental degradation and intractable poverty have become more complex. Alleviating poverty and protecting the environment for sustainable development is not only necessary but also imperative. For sustainability, there is the need to maintain balance between (i) maintaining a constant natural capital stock and environmental "sink" capacity and (ii) improving the quality of life through poverty alleviation.
- xiii. *Limited private sector participation in environmental management:* A prosperous economy depends on a well-defined and functional market. But for environmental resources, the market forces are not functioning well and this is one of the reasons for environmental degradation. The private sector as a major player in the market forces must therefore be adequately involved in environmental management. Improving the level of private sector participation in environmental management to take economic responsibilities for damages done to the environment is critical. This would mean establishing a framework for proper environmental valuation of the activities of the private sector. The cost of environmental mitigation needs to be incorporated into the capital outlay as part of the Corporate Social Responsibility (CSR) of every private establishment.
- xiv. *Conservation of shared natural resources:* Conflicts over control and management of shared resources are very common in many parts of Nigeria. For example, the Lake Chad region experiences perennial conflicts concerning access to its water and fisheries resources. This calls for a framework for a harmonized and common approach to the conservation and management of such shared resources.



### 3. Goals, Objectives and Guiding principles

#### 3.1 Policy Goal

The goal of the National Policy on the Environment is to '*ensure environmental protection and the conservation of natural resources for sustainable development*'.

#### 3.2 Strategic Objectives

The strategic objective of the National Policy on the Environment is to coordinate environmental protection and natural resources conservation for sustainable development. This goal will be achieved by the following strategic objectives:

- i. securing a quality of environment adequate for good health and well being;
- ii. promoting sustainable use of natural resources and the restoration and maintenance of the biological diversity of ecosystems;
- iii. promoting an understanding of the essential linkages between the environment, social and economic development issues;
- iv. encouraging individual and community participation in environmental improvement initiatives;
- v. raising public awareness and engendering a national culture of environmental preservation; and
- vi. building partnership among all stakeholders, including government at all levels, international institutions and governments, non-governmental agencies and communities on environmental matters.

#### 3.3 Guiding Principles

The following principles are central to the attainment of the strategic objectives of this Policy:

- i. ***The Public Trust Doctrine***, which recognizes that the State is a trustee of all natural resources, the enjoyment of which is subject to a measure of control necessary to protect the legitimate interest of all sections and stakeholders in the larger framework of strategic national interests;
- ii. ***Environmental Right***, which ensures that every Nigerian has a right to a clean and healthy environment and a duty to safeguard and enhance the environment;
- iii. ***Environmental Offsetting***, which requires that where for exceptional reasons of overriding public interest, the general obligation to protect threatened or endangered species and natural systems that are of special importance to sustaining life, providing livelihoods, or general well-being cannot be provided, such cost-effective offsetting measures must be undertaken by the proponents of an activity to restore as nearly as may be feasible the lost environmental services to the community;
- iv. ***The Polluter Pays Principle***, which prescribes that the polluter should bear the cost of preventing, and remediating pollution;
- v. ***The User Pays Principle*** in which the cost of a resource to a user must include all the environmental costs associated with its extraction, transformation and use (including the costs of alternative or future uses forgone);

- vi. **The Precautionary Principle**, which holds that where there are threats of serious or irreversible damage, the lack of full scientific knowledge shall not be used as a reason for postponing cost-effective means to prevent environmental degradation;
- vii. **The Subsidiarity Principle**, which reflects the a preference for making decisions at the lowest level of government or social organization where the issue can be effectively managed – decisions made at the local level are often viewed as more likely to take account of local environmental conditions and the opinions of the local people who often bear the highest environmental costs of development;
- viii. **Pollution Prevention Pays Principle**, which encourages Industry to invest positively to prevent pollution;
- ix. **The Principle of Inter-generational Equity**, which requires that the needs of the present generation are met without compromising the ability of future generations to meet their own needs;
- x. **The Principle of Intra-generational Equity**, which requires that different groups of people within the country and within the present generation have the right to benefit equally from the exploitation of resources and that they have equal right to a clean and healthy environment;
- xi. **The Principle of Participation**, which requires that decisions should, as much as possible, be made by the people or on their behalf by representatives chosen by them;
- xii. **International Cooperation** in which the country will domesticate multilateral environmental agreements (MEAs) and regional instruments and implement them cooperatively for better environmental management of shared resources. In this regard, the country will take cognizance of all relevant international agreement on the environment and mainstream them in the protection of Nigeria’s environment;
- xiii. **Good Environmental Governance** in which rule of law, effective institutions, transparency and accountability, respect for human rights and the meaningful participation of citizens will be integrated in environmental management;
- xiv. **Integrated Ecosystem Approach** to conserving environmental resources is adopted and enhanced to ensure that all the country’s ecosystems are managed for sustainable development and benefits of the people.

## 4. Conservation and Management of Natural Resources

Nigeria is blessed with a rich array of natural resources which provide the basis for national development. Consequently, the conservation and management of this wide variety of resources are crucial to sustainable development.

### 4.1 Air and Atmospheric Resources

The atmosphere is very vital for the survival of humans and other living things. It provides air for respiration and photosynthetic processes. It also provides an environment that envelopes humans and other living organisms, shielding them from dangerous particles and rays. The atmosphere also provides habitat for myriads of organisms that live all or much of their life in the air.

The Nigeria's atmosphere needs to be protected from intensifying, widespread and multifarious agents of pollution. Air pollution arising from natural and human-made sources, is increasing. Human-made sources include industrialization (.e.g. cement industries and petrochemicals), automobile exhausts and release of some chemicals into the atmosphere, notably sulphur dioxide, nitrogen oxides, carbon monoxides, hydrocarbons and particulate matter, as well as biomass burning and emissions from agriculture and livestock keeping. These all have implications for forest and crop productivity and for public health. For example, air pollution is a leading cause of respiratory diseases such as chronic obstructive pulmonary disease (COPD), lung cancer, pulmonary heart disease, and bronchitis. The effects of outdoor air pollution are compounded by those of indoor air pollution. Most households use charcoal and firewood for domestic cooking. Indoor air pollution affects both urban and rural populations.

The effects of air pollution are likely to be exacerbated by changing meteorological conditions of temperature humidity, wind and precipitation, among others, particularly in this era of increasing variability in climate. The country needs not only to commence on serious research work in estimating the effects of air pollution and contamination on agriculture, forestry, ornamental horticulture, health, but must also put in place means for standardization, effective monitoring and enforcement of standards against atmospheric pollution.

#### ***Policy Statements***

The Government will:

1. Support the Federal Ministry of Environment to put in place and/or strengthen institutional arrangement for tackling the problems of atmospheric pollution in collaboration with the Federal Ministries of Civil Aviation (Nigerian Meteorological Services – NIMET) and Health, as well as other relevant Agencies.
2. Strengthen existing environmental guidelines and standards, and develop new ones where necessary in order to counter the increasing level of emissions, particularly in the urban and industrial areas.
3. Develop or strengthen air standard enforcement capacity.
4. Improve monitoring of traditional and trace pollutant emissions and concentrations.
5. Promote efficient non-motorized and mass transport system.
6. Promote alternative cooking stoves and new technologies that are non-polluting, affordable,

available, and adaptable and the construction of well ventilated houses.

## **4.2 Fresh Water and Wet-land Ecosystems**

Freshwater ecosystems and wetlands are some of the most productive ecosystems which are essential in the provision of environmental goods and services. Gladly, Nigeria is well-endowed with freshwater and wetland ecosystems (lakes, rivers and wetlands) covering about 13 million hectares of the geographical territory. The country is largely drained by four major basin systems including (i) the Niger River basin drainage system with its major tributaries of Benue, Sokoto-Rima, Kaduna, Gongola, Katsina-Ala, Donga, Taraba, Hawal and Anambra; (ii) the Lake Chad inland drainage system comprising Kano, Hadejia, Jama'are, Misau, Komadougou-Yobe, Yedseram and Ebeji Rivers; (iii) the Atlantic drainage system to the west of the Niger consisting of the Ogun, Oshun, Benin, and Owena Rivers; and (iv) the Atlantic drainage system to the east of the Niger made up of the Anambra, Imo, Cross, Qua Iboe and Kwa Rivers. In addition, three major types of groundwater aquifers are observed in the country, namely: basement aquifers, deep coastal sedimentary aquifers and superficial aquifers. The total quantity of Nigeria's annual groundwater recharge is estimated at about 9.5 trillion litres. Numerous lakes and wetlands also exist in the country including Lake Chad that is shared with Chad, Cameroun and Niger Republics as well as wetlands of international importance which are seasonal habitats for Palearctic migrants.

Most of the major rivers have been dammed to supply water for irrigation, power generation, and domestic consumption. However, this has created problems of accelerated erosion in the coastal zone, as well as marginalization of pastoralists who are dependent on seasonal floods. Moreover, freshwater availability has become one of the most critical factors in the country's development. Accessibility to freshwater and its integrated management also remain major concerns. Inappropriate management of freshwater and competition between user groups limit efforts by the government to develop the nation's economy and improve the standard of living of the citizens. There are also concerns over freshwater quality, in terms of pollution from domestic effluents and industrial wastewater, particularly in the coastal zone of Lagos and the oil producing Niger-Delta region. Access to good quality drinking water and sanitation has consequently remained low.

Nigeria is among six West African countries expected to experience water scarcity by 2025. Climate Change is predicted to bring about reduced rainfall and increased evaporation in the areas to the north through the expansion of desertification in the northern belt (IPCC 2001). The coastal belt may experience more intense rainfall and increased run-off which could have serious consequences for soil erosion and agricultural productivity.

An increasing number of Nigerians are now dependent on groundwater as their primary source of potable water. The situation is worsened by unregulated borehole drillings across the nation for self-help water provisions owing to a severely inadequate public water supply system. This further threatens the fresh water supply of the country. Coordinated systems of water collection, storage and retention for domestic and agricultural usage are largely lacking and contribute to wastage of the scarce resource.

### ***Policy Statements***

The Government will:

1. Implement the National Water Policy or Act

2. Develop and implement integrated wetland and water resources management strategies and action plans in order to achieve Nigeria's water vision of sustainable access to clean and safe water for all.
3. Encourage community participation in the design, establishment, operation and maintenance of freshwater management programmes and infrastructure while promoting the integration of land and water management.
4. Provide water in adequate quantity and quality to meet domestic, industrial, agricultural, recreational and other needs.
5. Promote use of water efficient technology, water user organizations, pricing policies and productivity gains.
6. Restore and regularly maintain the decaying infrastructure for hydrometeorological and hydrogeological data collection, compilation, analysis and dissemination.
7. Promote sustainable use of freshwater, wetland and underground water resources and the conservation of vulnerable river and lake ecosystems in particular and biological diversity in general.
8. Improve the productivity of rain-fed and irrigated land in an effort to balance conflicting uses of water within river basins.
9. Develop and implement a national wetland policy and regulations as well as wetland management plans for all Ramsar sites through a participatory process.
10. Ensure rehabilitation and restoration of degraded wetlands, riverbanks and lakeshores and, where appropriate, promote and support establishment of constructed wetlands.
11. Develop and enforce effective water pollution prevention and control programmes including criteria for monitoring the biological, physical, and chemical quality of water bodies while instituting mechanisms to address deviation from standards.
12. Develop and implement mitigation measures to address climate change and its impact on freshwater and wetland ecosystems.
13. Conduct education and outreach programmes on sustainable use of freshwater resources.
14. Harmonize and coordinate the roles of various regulatory agencies charged with the management of freshwater and wetland ecosystems.
15. Implement existing international agreements on freshwater resources and promote partnership and cooperation at regional and global levels particularly in the development and management of shared rivers, lakes and wetlands.
16. Ensure that developmental activities within the freshwater and wet-land ecosystems conform to EIA process and procedures.

### **4.3 Coastal and Marine Ecosystem**

The Nigeria's coastal and marine environment stretches for about 853 km along the coastline and inland for a distance of about 15km in Lagos in the west to about 150km in the Niger Delta and about 25km east of the Niger Delta. It consists of barrier bar/lagoon system, the Mahin mud coast, the Niger Delta, Strand coast and a moderately wide continental shelf.

The coastal and marine ecosystems are highly interactive ecosystems whose management requires fully integrated approaches to ensure the health of all species that are in them - as well as supporting human activities that depend on them in a positive and sustainable manner. The health of these systems is



essential to support their storage and recycling of nutrients, protecting shorelines and filtering pollutions.

Like many ecosystems in Nigeria, the marine and coastal area of the country is affected by many environmental problems that are being addressed for sustainable development. Industrialization, urban development, and oil and gas exploration and exploitation have infringed on the people and their environment, leading to the opening up of previously pristine ecosystems characteristic of the region. This has in turn led to alterations of habitats, biodiversity loss, deforestation and pollution (UNDP, 2006). While natural hazards, such as floods, are clearly responsible for some of the environmental impacts, industrial activities have no doubt aggravated them. In general, the coastal and marine ecosystems have generally been treated as resources for exploitation without much emphasis on protecting and replenishing them for sustainable development. Unsustainable fishing methods decimate fish stocks. These ecosystems are badly used as discharge areas for wastes from land-based activities including industrial effluents, human wastes, storm drains and toxic wastes from extractive activities. The current rising human population pressure, silting and land use patterns and changes are major threats to the coastal and marine ecosystems. Major areas of environmental challenges include (i) pollution from oil spills, gas flaring, industrial and agricultural effluents, sewage and solid wastes; (ii) modification of ecosystem in the form of biodiversity loss, coastal erosion, flooding, deforestation, salt water intrusion and invasive/exotic species; and (iii) depletion of fisheries resources.

Urbanization pressures have led to major wetland and marine ecosystem destruction through efforts at land reclamation. Alien species invasion pose special challenges in the use of the ecosystems for transportation, fishing and other activities. Canalization for movement of industrial equipment has facilitated salinization of inland fresh water ecosystems leading to water stress and related loss of aquatic resources

To adequately protect and improve the coastal and marine ecosystems any comprehensive ecological master plan must include baseline data of freshwater and wetland ecosystems.

***Policy Statements:***

The Government will:

1. Ensure the preparation of comprehensive marine and coastal ecosystem baseline and plan for regular audits.
2. Prepare and implement a harmonized integrated Ecological Master Plan (EMP) as well as Coastal Zone Management Action Plan.
3. Implement the West Africa Coastal Areas (WACA) programme to reduce the country's vulnerability to coastal erosion, flooding and sedimentation problems.
4. Install and operate an integrated maritime monitoring system.
5. Build capacity, share knowledge and ensure community participation in the plans and management of coastal and marine ecosystems.
6. Establish strict control of discharge of pollutants and toxic wastes into coastal and marine ecosystems including ensuring compliance to relevant laws and regulations.
7. Coordinate the roles of all agencies interfacing on the management of coastal and marine ecosystems to ensure policy coherence and optimum resource protection.
8. Control physical growths including reclamation of wetlands for socio-economic developments

9. Promote actions to protect and preserve land masses that help defend coastal areas and communities from the impacts of ocean waves.
10. Support and promote research and cross-sectoral capacity enhancement in the conservation, protection and management of marine and coastal resources.
11. Designate areas with endemic species and demarcate such areas as Marine Protected Areas to make them no-go areas for industrial or other harmful human activities of any sort.
12. Set up accessible emergency response mechanisms in coastal communities for cases of on or offshore accidents.
13. Adhere to strict Environmental Impact Assessments (EIA) when considering activities such as aquaculture that places demand on marine ecosystem resources.

#### **4.4 Montane Ecosystems**

Montane ecosystems are particularly fragile but are especially important for freshwater resources and biodiversity conservation. In Nigeria, Montane forests are found primarily on the highlands that form the southeastern border between Nigeria and Cameroun including both the Mambilla and Obudu mountain ranges. They are also typical of the Jos Plateau though most have been replaced with introduced species. Although some of this high altitude area consists of grassland, shrubs and rocky outcrops, there are some patches of Montane forests along the eastern, southern and western sections that merge gradually into lowland rainforest at the base. Due in large part to their geographic isolation and unique microclimate, they contain considerable biodiversity and many of the plant and animal species found here are endemic to these areas. Two types of Montane forests have been identified in Nigeria. The first type is the mist forest with a diversity of moss and epiphyte species and uneven canopies, and drier forests higher up, where dwarf and stunted trees occur.

Montane forests constitute about one percent of the total land area of Nigeria, representing about 10,000 square kilometer made up of forest (0.7%) and savanna (0.3%). While the forest components have been receding over the past decades due to overexploitation and clearance for developmental and agricultural activities, the grassland has been on the increase. The Jos Plateau for example, is a highland area that once contained tracts of montane forests which has been highly modified by anthropogenic factors and now only remnant patches exist. Erosion, due to uncontrolled mining activities, overgrazing, unsustainable agricultural practices as well as trampling of stream and gully banks and hill slopes, and stream banks cultivation is another major environmental challenge in Nigeria's montane ecosystems.

#### ***Policy Statements***

The Government will:

1. Generate and strengthen knowledge about the ecology and sustainable management of montane ecosystems.
2. Develop and implement strategies and action plans for sustainable management of montane ecosystems.
3. Promote integrated watershed management and alternative livelihood opportunities to enhance community participation in the conservation and management of montane ecosystems.
4. Adopt appropriate land use planning and watershed management practices for sustainable development of montane ecosystems.

#### **4.5 Semi- Arid Ecosystems**

Semi-Arid Land is a fragile ecosystem that receives very low and unreliable rainfall. In Nigeria, this ecosystem largely falls within the Sahel savanna belt where climate variability is greatest, and drought is common and often severe. Cultivation is limited, and the dominant agricultural activity is pastoral livestock rearing comprising cattle, goats and sheep. In this ecosystem, the main agent of soil erosion is the wind, which is supported by dry climatic conditions. Overgrazing and trampling reduces the vegetative cover and causes compacting of the soil, which is then vulnerable to erosion and desertification. It has been estimated that upwards of 50% of this ecosystem is affected by desertification. The zone, with a population of about 30 million people, accounts for about 43% of the country's total land area. The IPCC predicts that rainfall and run-off will decline, and that evaporation will increase in this zone, further contributing to desertification pressures in future (IPCC, 2001). The semi-arid area of Nigeria is also faced with other environmental challenges such as uncontrolled expansion in agriculture, and fuel wood collection, over exploitation of water resources, poor irrigation practices, bush fires, human settlements, land degradation, and de-vegetation. This is exacerbated by rapidly growing population and the impacts of climate change which have led not only to social conflicts between herdsman and farmers but also insurgency by some youths in that zone as evident in the ongoing violence in the North east of Nigeria. The Government is giving special attention to investment in ASALs that include development of an Integrated Land Use Master (Development) Plan.

#### ***Policy Statements***

The Government will:

1. Develop and implement an Integrated Natural Resources Management Strategy and Land Use Master Plan for the semi-arid areas of the country.
2. Involve local people in the design, implementation and management of land and water resources intervention programmes including afforestation and reforestation programmes.
3. Adopt an integrated approach to address, bio-physical and socio-economic aspects of desertification and drought in the semi-arid ecosystem.
4. Promote efficient measures for productive and sustainable resource management and establish drought early warning systems in the semi-arid area of the country.
5. Implement the National Policy on Desertification and Mitigation of Drought, the National Action Plan (NAP) to combat desertification and the National Plan on Drought and Desertification Emergency Preparedness as well as create a Desertification Trust Fund.
6. Promote measures to minimize pastoralists- farmers' conflicts and introduce youth empowerment programmes as a means of tackling insurgency.
7. Integrate public awareness and education on management of land and water resources in the semi-arid ecosystem.
8. Strengthen national and state institutions towards implementing sustainable agricultural practices and effective tackling of land degradation problems.
9. Intensify international and regional cooperation and partnership arrangements in the management of shared Land and water resources of the semi-arid zone as well as in the areas of research, capacity building and provision of additional technical and financial resources.
10. Intensify the implementation of the Great Green Wall for Sahara Development Initiative to enhance ecological recovery of areas threatened by drought and desertification in the semi-arid zone.
11. Fully domesticate and implement relevant sections of the United Nations Convention to Combat Desertification to the country's needs.

## 4.6 Forest Ecosystems

The conservation and sustainable development of forest ecosystems and their associated resources is essential for lasting poverty reduction and sustainable development. The tropical Forest ecosystems are important in conservation of soil, water and biodiversity. They are the richest terrestrial habitats for biodiversity. Moreover, forests play a vital role in carbon sequestration and, therefore, in global climate regulation as well as in regulating local air quality and rainfall patterns. Nigeria primarily has three main forest ecosystems comprising the mangrove (in areas diurnally flooded by salt water) and fresh water swamp forest along the coast; tropical rain forest and three main savanna forest types (Guinea, Sudan, and the Sahel). About four-fifths of the land area is savanna; the remainder is covered by rain forests.

The major form of vegetation in the Niger Delta area is the inter-tidal forested wetland known as mangrove. Recent forms of direct impact include the destruction of biodiversity by land uses such as oil and gas production, aquaculture (shrimp and fish ponds), agriculture (rice), urban development, and forest clear-felling for economic gain and other purposes. Indirect loss of mangrove biodiversity components has resulted from human alterations of upland watersheds, causing diversion of freshwater flows (dams and canals), and deterioration of water quality from the input of toxic chemicals (heavy metals, oil spills, pesticides) and nutrients to rivers and coastal waters.

Most of Nigeria's rainforests, which fall within one of the world's 25 biodiversity hotspots that is, the Congolian sub-unit of the Guinea-Congolian bio-geographical zone, have now been cleared, and only a small isolated forest reserves remain. The rarest subspecies of gorilla, the Cross River Gorilla (*Gorilla gorilla diehli*) is found in fragments of this forest in Nigeria, Cameroon and Bioko Island. Nigeria's forests have been dwindling at an annual rate of 3.5% during the last three decades due largely to pressure from Agriculture, industry, human settlement and infrastructure. In addition, extraction of forest products, illegal logging, cutting trees for fuelwood and charcoal, and grazing of livestock have also contributed to the degradation of forests. Between 1990 and 2015, Nigeria lost about 35% of its remaining forest resources and over 50% of other wooded land (FAO 2015 Global Forest Resources Assessment), making it a country with the highest rate of deforestation in the world. These competing land uses have adverse environmental, social and economic effects on long term sustainability of forest ecosystems as well as human wellbeing.

### ***Policy Statements***

The Government will:

1. Formulate and implement innovative strategy to increase forest and tree cover to at least 25% of the total land area (in line with the FAO standard).
2. Develop and implement a National Strategy for Rehabilitation and Restoration of degraded forest ecosystems.
3. Promote the rational exploitation of forest resources to meet domestic consumption needs and to achieve a significant export activity on a long term basis.

4. Protect, conserve, and create new forests for scientific, recreational, cultural and economic purposes while ensuring proper dissemination of scientific and technological information conducive to more efficient use of forest resources.
5. Review and support the effective implementation of the National Forest Policy and other related policies and legislations.
6. Regulate forestry activities to enhance conservation and environmentally sound management practices.
7. Facilitate institutional capacity development and implement cost-effective, objective and measurable national standards, principles and criteria of sustainable forest management including mandatory Environmental Impact Assessment for major development projects involving substantial removal of forest resources.
8. Develop and support appropriate forest-based development mechanisms in the emerging carbon markets
9. Develop and expand energy generation from renewable resources (such as hydropower and solar power) as well as centralized power generation from using fossil fuels to using cleaner technologies in order to reduce pressures on forests and woodlands.
10. Integrate economic and social development priorities into forest conservation measures so that local communities can share in the management of the resource and in the benefits of trade in their products.
11. Develop measures for the sustainable use and management of forest genetic resources through a combination of *in situ* and *ex situ* methods while minimizing the impacts of forestry operations on biodiversity.
12. Carry out periodic assessment of the state of forest ecosystems and identifying threatened, endangered and extinct species for priority actions.
13. Implement a Forestry Trust Fund (FTF) for forest activities in Nigeria.
14. Promote research and development in areas of forestry development.

#### **4.7 Biodiversity and Wildlife Resources**

Nigeria occupies a unique geographic position in Africa and its highly varied climate and other geographic features endow her with one of the richest biodiversity in the continent. Its diversity of natural ecosystems and the rich and varied biological resources form the nation's natural wealth on which its social and economic systems are based. These resources also have global importance, for the world's climate and for the development of agriculture or industrial activities such as pharmaceuticals, tourism and construction, to name but a few of the most important areas.

According to the 2006 National Biodiversity Strategy and Action Plan, Nigeria possesses more than 5,000 recorded species of plants, 22,090 species of animals, including insects and 889 species of birds, and 1,489 species of micro-organisms. By 1992, the country study listed 135 reptile species, 109 amphibian species and 648 fish species and the forests along the south-eastern border with Cameroon area known to be a hotspot for amphibian biodiversity. Nigeria is known as a global hotspot for primate species, with a great diversity found especially in the Gulf of Guinea forests of Cross River State and adjacent parts of Cameroon. Some important endemic birds and mammals include three monkey species, the white-throated monkey (*Cercopithecus erythrogaster*), Sclater's guenon (*Cercopithecus sclateri*) and the Niger Delta red colobus (*Procolobus pennantii epieni*) and three birds, the Anambra waxbill (*Estrilda*

*poplipaia*), the Ibadan malimbe, (*Malimbus ibadanensis*) and the Jos indigo-bird (*Vidua maryae*). The most endangered gorilla subspecies on earth, the Cross River gorilla (*Gorilla gorilla diehli*) with an estimated population of less than 250 individuals is found only in a couple of protected areas near the Nigeria/Cameroon border.

The IUCN Red List of Threatened Species (i.e. of globally threatened species) includes 148 animals and 146 plants that are found in Nigeria. Of these, 26 animals and 18 plants are classified as endangered and another three animals and 15 plants are critically endangered worldwide.

Natural and human-made threats, socio-cultural problems as well as direct and indirect consequences of socio-economic development, particularly agriculture, have contributed to the erosion of biodiversity at all levels. Within the last 30 years, about 43 percent of the forest ecosystem has been lost through human activity. Close to 96 percent of the original 20 percent forest cover has been cleared and only 2 percent of what remains is undisturbed. This has resulted in massive loss of the very rich and diverse forest flora and fauna, including indigenous tree species. Large parts of the savanna are also being degraded particularly through wood harvesting for fuelwood and charcoal production, causing ecosystem impoverishment and biodiversity loss. The protected area system in Nigeria currently covers only 5.7 percent of the land mass. The number of threatened and endangered species has also been on the increase. It is estimated that 0.4 percent of the plant species are threatened and 8.5 percent endangered, with 0.14 percent of the animals and insects threatened and 0.22 percent endangered. In addition, about 10-12 species of primates are threatened.

In general, since the beginning of the last century, biological resources in Nigeria have been subjected to increasing pressures of habitat loss, overharvesting, pollution and the introduction of and invasion by alien species. Consequently their productive potential for present and future generations is threatened. Improvement in the quality of life for the people will require long-term economic growth which is itself dependent upon improved management and conservation of the natural resource base. Several obstacles to sustainable management of biodiversity include financial and human resource constraints, lack of awareness among the general public and among decision makers, inadequate legal structures at the national level, and ineffective cooperation between countries in the sub region.

Sustainable management of biodiversity and wildlife in Nigeria requires a careful juxtaposition between the needs of a large and growing human population today and the long-term sustainability of the natural resources that people ultimately depend upon for the future.

#### ***Policy Statements***

The Government will:

1. Revise and implement the National Biodiversity Strategy and Action Plan.
2. Make biodiversity and wildlife conservation a development priority through proper mainstreaming into sectoral policies, plans and programmes.
3. Encourage community action to halt the loss of the nation's biodiversity and wildlife by increasing devolution of the rights and management of natural resources to indigenous and local communities, communication outreach and capacity building.
4. Encourage sustainable use of farmlands, forest and wetlands outside protected areas while promoting in-situ and ex-situ biodiversity conservation.

5. Promote sustainable consumption patterns and introduce population control measures in order to minimize human impact on biodiversity and wildlife resources.
6. Conserve and facilitate access to genetic resources that are important to agriculture, medicine and industry;
7. Support the sharing of the benefits and knowledge, expertise and technologies in the use of biodiversity in a fair and equitable manner;
8. Assess periodically the national biodiversity conservation status through monitoring and identification and strengthen Research centres for the exchange of data and information of relevance to the conservation of biological diversity.
9. Establish a biodiversity data base as the basis for evaluation and monitoring.
10. Support the development of national income accounting systems which compensate for the degradation and depletion of natural resource stocks;
11. Monitor, regulate and minimize processes and categories of activities that have or are likely to have significant adverse impact on the conservation of biodiversity;
12. Monitor the impact of trade in wildlife and wild plants on biodiversity
13. Conduct a periodic country-wide total economic valuation of biodiversity, with an emphasis on goods and services that draw linkages between biodiversity, the economy and poverty alleviation;
14. Encourage the banking and financial sectors of the economy to identify incentives and opportunities favourable to biodiversity in investment and lending policies;
15. Design and implement focused awareness campaigns on threatening processes, including invasive species and climate change;
16. Develop, implement and strengthen programmes for international scientific collaboration, sharing of information and technology transfer;
17. Cooperate with the international community to devise policies, programmes and projects that enhance conservation and sustainable use of shared biodiversity resources.
18. Domesticating and implement the relevant sections of the United Nations Convention on Biological Diversity to the country's benefits.

#### 4.8 Livestock and Fishery

Agro-ecosystems are those in which people have deliberately selected crop plants and livestock animals to replace the natural flora and fauna. These artificial systems vary enormously in the intensity of human intervention from those with only low-intensity management (e.g. shifting cultivation, home gardens, nomadic pastoralism, traditional compound farms, rotational fallows and savannah mixed farming), to those of middle-intensity management (including multiple cropping, horticulture and improved pasture mixed farming), and high-intensity management (intensive cereal cropping, orchards and plantations, and intensive livestock raising).

Today, the traditional, more environment-friendly systems of agriculture are breaking down in Nigeria and the fragile balance between agro-ecosystems and natural ecosystems is crumbling due to increasing human intervention and overuse. In many parts of the country, mechanized agriculture, dams and irrigation schemes are degrading the land and also harm the ability of agro-ecosystems to support biodiversity. Intensified agricultural uses, including agricultural encroachment into forested areas has resulted in extreme erosion problems in many parts of Nigeria.

**Livestock:** Livestock production in Nigeria is predominantly the pastoral type. During the dry season and drought years, movement of large animals has a tremendous negative effect on the soils, rangeland and even the woody



vegetation in the country, especially along the two existing pastoral corridors running from the north to the south. The moving animals thus contribute to erosion menace and desertification while watering points, often used by the farmers, also become sources of conflict.

#### ***Policy Statements***

For sustainable and environment friendly livestock production, the Government will:

1. Conserve the genetic diversity found in existing domesticated plants and animals and their related wild species;
2. Identify and use wild species and genetic diversity to improve livestock productivity and adaptability in the face of environmental change;
3. Minimize the adverse impacts of agricultural practices on agro-ecosystems and natural ecosystems;
4. Establish policy incentives (e.g. tax breaks, subsidies) so that farmers will retain some areas managed with traditional techniques where necessary to maintain genetic diversity;
5. Build capacity within government, the private sector, NGOs and communities on how to integrate environment into viable agricultural practices.

**Fishery:** Nigeria has a diversity of fin and shell fish fauna consisting of over 250 species in the inland freshwater alone and 199 species from 78 families in the brackish and marine waters. The freshwater bodies should be capable of producing 511,702 metric tons of fish under adequate management. On the other hand, the potential yield of fish from the coastal and brackish waters has been estimated as follows: 22,000 MT from demersal resources; 120,000 MT from pelagic resources; and 48,000 MT from shell-fish; giving a total fish yield of 190,000 MT. It is estimated that the fisheries potential for aquaculture in Nigeria is near 656,820 MT/annum. The major constraints to effective development and conservation of the country's marine and freshwater fisheries resources are the lack of adequate information, over-exploitation stemming from poor legislation, ineffective enforcement machinery and pollution.

#### ***Policy Statements***

For sustainable fishery development, the Government will:

1. Promote the use of more sustainable fishing practices that minimize the risk of irreversibly harming ecosystem structure and essential processes.
2. Recognize the role of traditional use rights and traditional knowledge and the importance of property rights and institutions.
3. Encourage community participation and community-based fishing cooperatives as means of improving the livelihoods of small-scale fishermen and of strengthening local resource management.
4. Develop more reliable scientific information and encourage better use of such information for effective management of fishery resources.
5. Develop and encourage the use of selective fish-capture methods in order to reduce the chances of capturing non-target fish (by-catch).
6. Combine the development of more effective fisheries regulations with better enforcement measures.
7. Build capacity of aquaculture workers not only for enhanced productivity of fish farms but also to minimize the risk of accidental releases of organisms into aquatic ecosystems.
8. Establish fish sanctuaries in selected locations all over the country and extend non-trawling zone in the inshore waters from 2 to 5 nautical miles from the baseline from which the



territorial sea is measured.

9. Embark on massive production of fingerlings of selected fishes for stocking reservoirs.

#### 4.9 Land Resources and Land Use

Land is central to environmental processes through its influence on biodiversity, water, energy, trace gas emissions, carbon cycling, and a wide range of socio-economic and ecological processes that affect livelihoods. It is the most important resource necessary for sustenance. Naturally speaking, Nigeria's land is richly endowed with abundant and diverse renewable and non-renewable resources. Human misuse, however, has resulted in several unfavorable changes. There is a general concern that inappropriate land use practices are resulting in increasing degradation of the country's land resource. For example, the increase in flood plain agriculture suggests intensification of cultivation within the *Fadama* while other surrounding lands are already close to the climatic limit of cultivation. In general, in the northern and central parts of the country, the Sudan savanna ecology is transiting to Sahel, an indication that desertification intensity is increasing. In a similar manner, the Guinea savanna in the south is giving way to Sudan savanna grassland. Deforestation, large scale land clearing and floodplain encroachment have led to the development severe gully erosion even in the northern part of the country where rainfall is limited.

Southern Nigeria, particularly the southeastern part, is affected by massive and expanding gully erosion. There are an estimated 3,000 gullies, which can be up to 10 km long with multiple fingers spreading through the rural or urban landscape. In southeastern states, gullies and areas exposed to erosion tripled increased from about 1.33% (1,021 km<sup>2</sup>) in 1976 to about 3.7% (2,820 km<sup>2</sup>) in 2006. Spectacular gullies have destroyed vast areas of land in Nanka, Agulu and Oko in Anambra state, Okigwe in Imo state, and parts of Abia, Enugu, and Ebonyi States. Other badly affected states include Ekiti, Gombe and Kogi. Ironically, many of the country's land degradation hotspots are also the most densely populated areas, such as Anambra state, the self-proclaimed gully capital of the world and the most densely populated region in Africa.

Recent estimates indicate that about 90% of the total land area of the country is under some form of soil erosion, ranging from sheet to rill and gully erosion, which are directly impacting the sustainability of key systems and livelihoods. Up to 6,000 km<sup>2</sup> (about 6% of Nigeria's land mass) are severely degraded.

Drought and desertification are by far the most pressing environmental problems afflicting northern parts of the country. The visible sign of desertification, resulting from persistent drought and climatic change, 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 conditions. 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 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, in a haphazard manner at the rate of about 600m per year. Desertification has continued to be a serious environmental menace to the country's land resources. It has reportedly resulted in the burial of some entire villages and major access roads under

sand dunes in the northern portions of some states, particularly Borno, Jigawa, Katsina, Sokoto and Yobe states.

Desertification, land degradation and drought remain major challenges for the country in the use of its land resources. The situation is worsening with climate change-induced floods that ravage the country at irregular intervals. These are also becoming more frequent. Flooding is becoming a more severe phenomenon in many parts of Nigeria. Flooding is aggravated by poor land use and watershed management practices. Human activities such as unplanned rapid urbanization, blockage of river/drainage channels, land clearing for agricultural purposes and deforestation contribute immensely to flooding. The most flood-prone areas in Nigeria include: (i) low-lying coastal areas of southern Nigeria where annual rainfall is heavy; (ii) the floodplains of major rivers such as the Niger, Benue, Gongola, Sokoto, Hadejia, Katsina-Ala, Donga, Kaduna, Gurara, Ogun and Anambra, etc., and (iii) the flat, low-lying areas around Lake Chad .

Halting land degradation, rehabilitating degraded areas, combating desertification and mitigating impacts of floods and droughts remains a major challenge for the country.

#### ***Policy Statements***

The Government will:

1. Review and implement National Policy on Drought and Desertification and the translation of the National Drought Preparedness Strategy to vernacular.
2. Undertake a baseline study to quantify the extent and severity of land degradation and desertification in the frontline and buffer States and mitigate the effects of Drought in Nigeria.
3. Strengthen the capacity of the Department of Drought and Desertification Amelioration (DDDA) in the Federal Ministry of Environment to co-ordinate activities for combating desertification
4. Implement the national strategy for the Great Green Wall Sahara and Sahel Initiative for the establishment of 1500 km by 15km of green wall in the frontline states to halt the advance of the Sahara Desert, enhance environmental sustainability and control land degradation.
5. Strengthen the capacities of the Departments of Forestry and/or Drought Desertification in each of the affected States to manage the Green Wall for environmental sustainability.
6. Strengthen the capacity of the Arid Zone Research Centre to play an effective advocacy role on the socio-economic impact of desertification.
7. Review the National Land-use Decree to accommodate aspect of sustainability in land-use practices.
8. Establish desertification control offices in all the 11 frontline states and buffer states as well as their LGAs.
9. Promote sustainable land management best practices.
10. Establish drought and desertification monitoring and early warning systems.
11. Rehabilitate at least 50% by 2020 for poverty reduction and sustainable job creation.
12. Apply modern and indigenous soil defense and restoration techniques and sustainable land management practices, including dune fixation, windbreaks, dykes, biological and agroforestry.
13. Promote awareness and active participation of communities in land management, particularly rehabilitation of degraded lands, programmes.
14. Promote active involvement of communities in the practices of sustainable land management.
15. Achieve land degradation neutrality in the country by 2030.

#### 4.10 Soils

Soil form the basis for nearly all of human food, livestock feed, fiber and fuel. It also provides the spatial dimension for the development of human settlements, including building of houses and infrastructures, recreation facilities and waste disposal. It's health, therefore, is fundamental to its sustainable use. Given low adoption of soil and water conservation measures all over Nigeria, the soils have continued to witness steady, and often rapid, degradation. Yet, land users, most especially farmers, continued to rely on them for livelihood. Soil degradation processes of particular concern throughout the country include accelerated erosion, decline in soil structure, crusting, compaction, nutrient depletion, acidification, depletion of soil organic matter, and reduction in the activity and species diversity of soil microorganisms.

With respect to crop production, soil degradation impacts productivity through its adverse effects on availability/imbalance of plant nutrients and water. Nutrient deficit is caused by prevalence of extractive farming practices such as removal of crop residues, lack of or low rate of application of inorganic fertilizers and organic amendments, extension of cultivation onto marginal lands, etc. In addition to land area affected by accelerated erosion, quite a sizable proportion of the country arable land have reached such a state of degradation that only huge investments could make them productive again. Soil degradation not only affect food security, through reduction in crop yields and decline in their nutritional values, but is also related to pollution of soil, air, and water, with severe impacts on human health. Because the poor generally lack the capacity to make land improving investments, are particularly dependent on annual crops (which generally degrade soils more than perennial crops), and on common property lands (which generally suffer greater degradation than privately managed land), they tend to suffer more than the non-poor from soil degradation. The process of reversing soil degradation is expensive and time consuming; some heavily degraded soils may not be recoverable. On the other hand, good management can limit physical losses.

#### ***Policy Statements***

The Government will:

1. Develop and implement a comprehensive National Policy and Erosion and Flood Control.
2. Develop and implement a National Soil Conservation Action Plan.
3. Implement the Nigeria Erosion and Watershed Management Programme (NEWMAP) to reduce the country's vulnerability to land degradation and strengthen the national enabling environment for effective implementation of erosion and watershed management.
4. Formulate and enforce regulations for soil and water conservation especially in erosion-prone areas.
5. Carry out national watershed delineation and characterization for use as a basis for development of an aggressive management and enforcement programme to protect and maintain the quality of the nation's soil resources from floods and erosion.
6. Promote and support eco and organic farming so as to maintain soil fertility.
7. Ensure the protection of wetlands, riverbanks, hilltops and slopes from unsustainable practices to prevent soil erosion and environmental degradation.

8. Build capacity for flood forecasting and monitoring.
9. Develop flood forecasting, prediction and early warning system for major river systems in the country.
10. Develop and implement community-based flood mitigations and prompt response measures and initiatives to minimize impacts of flooding.

#### **4.11 Oil and Gas**

Oil and gas are the major sources of foreign exchange earnings for Nigeria. , The sector contributes only 19.80 % to the nation’s rebased and further revised GDP. Nevertheless, the operations in the sector and the heavy reliance on it for income combine to pose acute challenges on the environment.

Oil and gas operations have direct impact on the environment including on soil, water and air quality. This is also a major industrial complex releasing tonnes of greenhouse gases and adding to the climate challenge. Seismic operations have impacts on deforestation and on biodiversity lose including impacts on aquatic and terrestrial life forms.

Decades of oil spill in the Niger Delta have been estimated to be in the magnitude of one Exxon Valdez per year. The impacts are widespread in soils, as well as in marine and coastal ecosystems. Gas flares not only constitute an economic waste but also poses serious air quality and health hazard. Toxic wastes, produced water and drilling mud and drilling cuts leave extensive footprints in the oil field communities’ environment

The environmental challenge is aggravated by less than optimum management and protection of pipelines have led to pipeline accidents and tampering by third parties manifesting from vandalism and sabotage. Poor decommissioning practices and management of non-producing oil wells pose environmental challenges and add to incidents of spills and accidents. Lax control of oil refineries and petrochemical complexes lead to release of carbon particulates impacting air quality; toxic effluents impacting surface and ground water systems and soils.

The classification of communities that have oil and gas installations on their territories as host communities pose special challenges and tend to divide communities, instigate disharmony and promote negative responses.

#### ***Policy Statements***

The Government will:

1. Ensure base line studies are conducted before operations begin
2. Require strict Environmental and Social Impact Assessments before permits are issued for oil and gas activities. Since oil and gas fields have lifespans there must be an approved and verifiable decommissioning plan for each installation before operations commence
3. Ensure that biodiversity conservation plans are integrated into the business plans in the oil and gas sector
4. Secure fragile ecosystems, places of cultural/heritage significance, and ensure that important land/seascapes are off-limits to oil and gas exploration and exploitation activities
5. Require regular environmental evaluations and risk management plans for oil and gas fields as

prerequisite planning tools.

6. Require regular audits throughout the life span of the particular fields
7. Establish a system for monitoring types and stocks of chemicals used and the quality and performance of plants such as Floating Production Storage and Offloading (FPSO) platforms and including integrity checks of ships, barges, pipelines and other equipment and installations.
8. Enforce legislations outlawing gas flaring
9. Require clear pollution prevention provisions in oil field operations.
10. Require appropriate authorities to ensure accurate measurement of volumes of crude oil and gas extracted from the fields as a means of estimating actual losses that may be stolen or are going into the environment unchecked.
11. Regularly review the corporate environmental programme of oil and gas companies to ensure that they are in line with this policy
12. Ensure that all incidents are reported promptly and responses, including clean ups, are in line with the international standards enumerated in the Environmental Guidelines and Standards for the Petroleum Industries in Nigeria (EGASPIN).
13. Support enhancement of capacity and requisite technical knowledge in communities
14. Integrate communities' inputs and participation in environmental planning and protection strategies and measures without compromising on technical knowledge and expertise
15. Consider all communities in particular oil and gas fields as host communities keeping in mind that pollution does not respect community boundaries.

#### **4.12 Minerals**

Every state in the nation boasts of deposits of solid minerals. The proposition that states can become economically viable by developing and exploiting these mineral resources has become common wisdom. The implication for the environment of a massive national push for the extraction of solid minerals will be acute degradation.

Mining is generally accompanied by environmental degradation. Remediation and mitigation of impacts often do not lead to full restoration. Open cast mining has a tendency to displace individuals and/or communities and leave unsightly scars in the environment. Pollution from surface and underground mines include those from acid mine drainage, tailings and other wastes. Solid minerals extraction impact fresh water supplies and may equally decimate aquatic resources and poison communities that depend on such sources for potable water.

Mining related activities have health impacts, including effects from heavy metals and other toxic elements. Workers and communities may be exposed to high levels of toxic chemicals used in the processes of mining and refining of ores. Preponderance of unregulated artisanal and industrial scale mining means uncontrolled environmental degradation with extensive implications for human health and that of other organisms.

Environmental degradation and land uptake by mining activities impacts agricultural production as well as other sources of local livelihoods thus deepening poverty in vulnerable communities. The drive for investments in the sector by transnational corporations poses new challenges especially related to the extremely friendly tax and regulatory regimes that may likely be extended to them.

Key challenges include: (i) inadequate skilled manpower to regulate, monitor and enforce compliance to the provisions of the Minerals and Mining Act/regulations; (ii) lack of Mining equipment, tools and faculties for monitoring mining activities in the mines field; (iii) inadequate infrastructural facilities at remote mining sites e.g access roads and power supply; (iv) lack of adequate awareness on the part of operators on sustainable mining practices; (v) problem of illegal mining in some of the remote mining areas; (vi) child labour issues in mining due to poverty mining communities; and (vii) lack of funds to remediate environmental degradation due to past mining activities.

#### ***Policy Statements***

The Government will:

1. Review and enforce the Solid Minerals Act 2007 appropriately.
2. Regulate all levels of mining including those at artisanal scales.
3. Ensure that developments in the sector comply with all environmental protection and health laws, guidelines and regulations.
4. Ensure that operators in the sector comply with the NEITI Act and are fully transparent and accountable.
5. Proscribe solid minerals prospecting and mining in fragile ecosystems including coastal waters, forests and other areas of high heritage value.
6. Require regular environmental evaluations and risk management plans for all minefields as prerequisite planning tools. Also require regular audits throughout the life span of the particular fields.
7. Establish a system of monitoring types and stocks of chemicals used and the quality and performance of plants.
8. Demand regular air and water quality monitoring in operational areas.
9. Internalize environmental costs as operational costs of the mining entities.
10. Enforce remediation, maintenance of aesthetic value of landscapes and containment and safe disposal of overspill materials and wastes within confines of mines.
11. Ensure suitable decommissioning and closure of mines and the full restoration of all mining sites and quarries.
12. Encourage research and weigh comparative advantages between solid minerals and other environmentally friendly products and activities.
13. Promote local participation and involvement of local communities and enterprises in the mining sector.
14. Engage in full rehabilitation of communities whose environment has already been degraded by mining activities including taking steps to promote recovery of biodiversity and artifacts of cultural significance.

## 5. Waste and Environmental Pollution

### 5.1 Waste

Solid waste disposal has become one of the environmental problems that the government is concerned about. Recent estimates indicate that the total amount of domestic waste per annum in Nigeria is about 63million tonnes (0.45kg/capital/annum). In general, the volume of solid wastes is overwhelming urban administrators' capacity to plan, evacuate and dispose wastes.

The problem of solid waste management is a major concern in the country. Waste is indiscriminately disposed such that solid waste dumps dot the urban landscape. Only about 30 -50% of waste is collected. Most of the urban areas lack effective system of refuse collection. As a result, most urban households resort to open dumping of refuse. The common arrangement, in the very few urban communities where a system is in place, is for waste management authorities to collect refuse from households and public containers. The operation of the waste management authorities is inefficient and ineffective as evidenced by mounds of decomposing rubbish that is a part of the regular landscape of many of the urban areas. Much of the generated waste is either burned or dumped haphazardly in illegal landfills or streets, where it creates health hazards and block drains, contributing to urban flooding.

The inability to sort waste at source means that household and industrial wastes, including toxic ones, are often handled together, leading to soil and groundwater pollution. In view of the mass amount of waste in many urban centres of the country, Nigerian cities have been adjudged as being unsanitary and the non-aesthetically pleasing. The situation is compounded by (i) unplanned sitting of waste dumps; (ii) preponderance of non-biodegradable materials such as plastic bags and containers in waste materials; (iii) rampant sewage leakages; and (iv) increasing dumping of e-waste (disused ICT materials) and medical waste in the country.

#### ***Policy Statements***

The Government will:

1. Enforce the implementation of the Harmful Waste Act (2004) and other waste management-related national laws and regulations.
2. Setup and enforce standards for sanitary facilities for the disposal of human and solid waste in dwellings, estates, public facilities in both rural and urban areas.
3. Regulate, register and license of all major land waste disposal sites and system.
4. Determine the use of environmentally safe and technological sound techniques for the disposal of toxic, hazardous and radioactive wastes.
5. Control generation of toxic hazardous and radioactive wastes especially those that are banned.
6. Evolve a clean environment where waste is managed and landscaped on a sustainable basis.
7. Secure and enforce a legislative ban on plastic bags.
8. Upscale ongoing community-based waste management pilot projects.
9. Secure appropriate funding for Integrated Waste Management Facility projects through public-private partnership in selected urban areas.



10. Promote and support “*waste to wealth*” initiatives at all levels.
11. Enhance the capacity of NOSDRA to effectively handle oily waste.

## 5.2 Environmental Pollution

Environmental pollution in Nigeria is much greater in magnitude today than in previous decades as a result of the high rate of population growth and urbanization, modernization of agriculture, especially in the increasing use of agrochemicals, the introduction of new technologies and consumer products, and, the ineffectiveness of the institutional, logistical and policy arrangements that have been put in place over the years to tackle the menace. Thus environmental degradation due to pollution must be tackled head-on if Nigeria is to achieve the vision of becoming one of the leading twenty economies in 2020, for a healthy environment is the basis of economic prosperity and sustainable development. Essentially this calls for a robust and holistic approach to pollution management in the country.

The dominant types of pollution in Nigeria are air, water, soil and noise pollution. Industries were the major sources of pollutants in Nigeria in 1980s and 1990s when well over 5,000 industrial facilities and 10,000 small scale industries were in operation on the Nigerian landscape. Constantly smoke from factory chimneys and dust are spewed into the air, untreated industrial effluent discharged directly into open drainage channels and some industries bury expired chemicals and hazardous waste in their backyards or dump them haphazardly, thereby threatening water quality in rivers and wells. The total dependence of manufacturing industries on diesel-powered electric generators is the main driving force of air pollution in major industrial centres in the country. In 1998 FEPA reported that air pollution load for Lagos state industries was about 51800metric tonnes, consisting of sulphur dioxide (37.6%), nitrogen oxides (31.5%) and particulates (26.5%).

Although many of the industries have closed down, pollution has by no means abated as those functioning still rely entirely on diesel-powered generators. Besides, the country has witnessed a tremendous upsurge in the number of automobiles and commercial motorcycles on our roads and streets as well as electric generators in homes and offices. These contraptions have become the new and widespread sources of pollution in Nigeria. The major pollutants from automobiles, motorcycles and electric generators are carbon emissions into the atmosphere, expended oil and battery acid which are dumped haphazardly within and on the outskirts of towns and excessive noise from all the three. Used crankcase oil from mechanic workshops, industries, power stations and commercial houses are dumped directly into drains and ground surfaces in urban centres. Studies elsewhere have identified excessive exposure to noise as detrimental to the neuro-endocrine, cardiovascular, respiratory and digestive systems. In addition chronic exposure to noise has been found to cause fatigue, reduced concentration and work efficiency.

Pollution from oil exploration activities in the Niger Delta remains of concern to the government. Oil spills from leaking underground pipelines and storage tanks are a regular occurrence, rendering vast tracts of land and water bodies unproductive in the region. National Oil Spill Detection and Response Agency (NOSDRA) recorded in first half of the year 2007 a total of 424 spill incidents involving 33,799 barrels of oil. Of these spill incidents 196 were due to Equipment or operation failure, 143 were caused by sabotage while the sources of the remaining 85 were in contention. As well, pollution from gas flaring



goes on daily because the flare-free deadline set by government has been postponed four times. The resultant heat stress and acid rain continue to degrade the ecosystem.

Pollution of air, water and soil in Nigeria also comes from extensive use of fertilisers on farms, dumping of expired and contraband chemicals and pesticides in the country, improper storage and handling of chemicals as well as improper disposal of hospital and municipal wastes.

An emerging and rapidly growing source of pollution is e-waste from developed countries being dumped in Nigeria. This form of waste consists of old computers and other electronic gadgets which contain deadly chemicals and toxins. The poor regularly sort through waste dumps to scavenge for anything they could sell and so unwittingly expose themselves to toxic hazards and health risks.

Main challenges of environmental pollution in Nigeria include: (i) poor identification of sources of specific pollutants due to the use of inappropriate technologies; and (ii) weak legal framework, institutions and human capacity to bring the pollutants to acceptable levels that conform to international standards.

#### ***Policy Statements***

The Government will:

1. Develop and implement a National Environmental Noise Policy
2. Develop and implement national strategies on air, water and noise pollution.
3. Provide guidelines for the abatement of air, noise and water pollution;
4. Strengthen capacity and infrastructure to monitor environmental (air, water and noise) pollution.
5. Designate and map National Air and Noise Control Zones and declaring air quality objectives for each designated Air Control Zone.
6. Establish ambient air, noise and water quality standards and monitoring stations at each designated zone.
7. Develop and implement a wide range of measures to control emissions from motor vehicles, power plants, and industrial and commercial processes locally.
8. Promote regional cooperation aimed at minimising the atmospheric transportation of pollutants across international boundaries.

### **5.3 Industry and Environment**

Industry is the very life wire of any economy. A strong industry necessarily produces a strong economy. It is therefore not surprising that the thrust of the nation's industrial policy, like trade, is the acceleration of the pace of industrialisation by the deliberate augmentation of value-addition at every stage of production and deliberate support for small and medium enterprises (SMEs) which are undoubtedly the engine rooms of industrialization and entrepreneurship. They contribute immensely to economic growth and generate employment. In the process, however, industries can contribute to the degradation of the environment. This calls for the need to carry along environmental concerns in the country's industrial development.

### ***Policy Statement***

The Government will:

1. Mainstream environmental considerations into National Industrial Policy.
2. Institutionalize environmental audit, including health and safety surveillance in industries
3. Ensure that environmental issues are into regional and international trade negotiations and domesticate agreements emanating therefrom.
4. Support the development and implementation of an environmentally-friendly national industrial policy and action plan.
5. Facilitate the strengthening of SMEs and other industrial outfits to adopt environmental-friendly technologies.
6. Build capacity on trade, industry and environment;
7. Create environmental awareness in technological and industrial growth.
8. Promote green growth development.
9. Ensure that all major industrial development projects are mandatorily preceded by approved and certified Environmental Impact Assessment (EIA).
10. Strengthen the capacity of NESREA to enforce laws that will, among others:
  - ✓ ensure strict adherence to land use zoning and demarcation of industrial areas to encourage the optimal utilization of shared facilities;
  - ✓ ensure that major industrial locations are selected on the basis of environmental considerations;
  - ✓ prevent industries from being sited close to ecologically sensitive areas, historic and archaeological monuments, national parks, scenic areas, beaches and resorts, coastal areas and estuaries, bird and animal sanctuaries, natural lakes, swamps, floodplains, wetlands, etc.;
  - ✓ discourage the trend to appropriate forest reserves and prime agricultural lands for industrial use;
  - ✓ prohibit the location of industries close to residential areas;
  - ✓ ensure the rational and sustainable exploitation and use of industrial raw materials taking into consideration the best conservation practice and prevention of resource depletion;
  - ✓ encourage the use of state-of-the-art equipment and environmentally sound technologies in process operations to enhance in-plant safety and healthy out-plant environments;
  - ✓ encourage existing industries to produce Comprehensive Industrial Master Plans that will show novel and more effective methods for phased pollution abatement and waste management, and compliance with set environmental standards;
  - ✓ ensure that production processes incorporate realistic programmes for cleaner production and waste minimization through material recovery, reuse and recycling;
  - ✓ ensure that sufficient space is provided on site for solid waste storage and primary effluent treatment;
  - ✓ ensuring the establishment of specialized facilities for the handling and disposal of toxic and hazardous wastes from industries;
  - ✓ enforce in-plant safety regulations and emergency procedures by compelling management to provide Personal Protective Equipment (PPE) and making it mandatory for workers to use them through their labour unions;
  - ✓ ensure workers good health through periodic monitoring of their state of health and provision of emergency and first aid services;

- ✓ reward all existing industries that articulate viable programmes of environmental pollution, remediation, facility sharing, and those with facilities for waste management through economic incentives such as tax holidays, soft loans, outright grants, etc.;
- ✓ prescribe strict adherence to the polluter-pay principle;
- ✓ ensure that financial institutions insist on the execution of a mandatory EIA of projects prior to granting of loans;
- ✓ ensure sustainable development through the maintenance of industrial infrastructural facilities, particularly water, roads, electricity, telecommunications, etc.;
- ✓ initiate periodic detailed environmental audits of major industries and compiling comprehensive inventory of pollutants;
- ✓ monitor effluents from factories and other non-point sources as well as leachates from approved industrial waste disposal sites to reduce/prevent contamination of air and groundwater;
- ✓ monitor on a continuous basis the Quality Assurance Standards/Requirements (such as Eco-labelling) of potential foreign market blocks (e.g. the EU) and ensure that local products meet the set standards.

## 6. Emerging Issues

### 6.1 Climate Change

Climate change has become one of the greatest global environmental challenges. Nigeria is strongly predisposed to severe negative impacts of climate change due to its fragile economy, weak resilience and low adaptive capacity. Much of the economy is dependent on climate-sensitive resources. For example, the agriculture, forestry and fishing sectors employ up to 70% of the workforce. Its fossil fuel-dependent economy will be particularly vulnerable to climate change-induced frequent and severe extreme events, such as floods and droughts. The heavy concentration of GDP generating industry in locations that are highly vulnerable to climate change-induced sea level rise, e.g. Lagos and the Niger Delta makes the country extremely vulnerable. The 2016 Climate Change Vulnerability Index (CCVI) published by the UK-based risk company, Maplecroft, classifies Nigeria as being of high risk in the southern part and extreme risk in the north. Climate change could result in a loss in GDP of between 6% and 30% by 2050, worth an estimated US\$ 100 to 460 billion dollars. If no adaptation is implemented, it is estimated that between 2-11% of Nigeria's GDP could potentially be lost by 2020, thereby hampering the national development goal of becoming one of the top 20 economies in the world. Overcoming the development challenge of climate change requires that extensive adaptation and mitigation measures that are necessary to reduce vulnerability to future climate change are put in place.

#### *Policy Statements*

The Government will:

1. Develop and implement a National Strategic Road Map for Responding to Climate Change in Nigeria and/or a National Climate Change Response Programme.
2. Domesticating the globally-agreed climate change regime of the United Nations Framework Convention on Climate Change (UNFCCC), including but not limited to the implementation of the Nationally Determined Contributions (NDCs) and the Paris Agreement.
3. Participate effectively and on a continuous basis in global climate change negotiations.
4. Implement the National Climate Change Policy and Response Strategy.
5. Implement the National Adaptation Strategy and Plan of Action (NASPA).
6. Develop and implement an Integrated Financial Strategy for Climate Change Response.
7. Mainstream climate change into all sectors of the national economy.
8. Promote evidence-based research in climate change.
9. Raise awareness on climate change mitigation and adaptation opportunities among various stakeholders at all levels.
10. Strengthen national climate change institutional structure and governance to include active participation by the States and the Local Governments.

### 6.2 Transboundary Water Resources

Nigeria is riparian to trans-boundary water bodies with neighbouring countries (e.g. Cameroon, Chad and Niger). The key ones are the Niger, Benue, Gada-Goulbi of Maradi, Maggia-Lamido and Komadugu-Yobe Basins' transboundary water resources management. Large abstractions and use of these trans-boundary water resources require understanding and agreement among the riparian states. Each of the trans-boundary water bodies exhibits unique characteristics, and a complex range of water

management challenges. The most important consideration in Nigeria's relations with those of its neighbours with which it shares rivers is that there must be respect for each country's equitable right to water from the shared resource as stated in the general principles. Since water does not recognize political boundaries, whether national or international, its management will be carried out in catchment areas although care must be taken that the policy of subsidiarity does not interfere with the need for a national and international perspective on water use. The framework for the management of international shared water resources remains the Helsinki Rules. These state that each country which shares any river (basin state) has the right to a reasonable and equitable share of the water in the basin, and that the greatest benefit should be achieved with the least disadvantage to other country. The Nigerian Government will ensure that shared water resources among riparian countries shall be used to strengthen socio-economic and political relations respecting international conventions and treaties that are in force.

#### ***Policy Statements***

The Government will:

1. Review and domesticate all international treaties and agreement on shared basis to reflect the key issues in the United Nations (UN) Convention, particularly the Helsinki Agreements and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention).
2. Set up appropriate institutions and put together necessary institutional framework in the areas of transboundary water resources management with the cooperation of adjoining countries.
3. Strengthen co-operation among riparian states in their efforts to find solution to development problems, thereby promoting cordial relationship among the people of the border regions to live as good neighbours.
4. Cooperate with other riparian countries for the development, optimum use and protection of transboundary waters wherever possible and in her national interest without compromising her sovereignty.
5. Develop and implement strategies for the rational and optimal use of the shared water resources for the development of Nigeria in order to improve the living conditions among the people of shared basin;
6. Support the regional agencies' activities, meet its own commitment and exert influence to ensure protection of her interest as a vulnerable downstream riparian state.

### **6.3 Environmental Disasters**

The country has continued to face a rising degree of vulnerability to disaster risk. The floods of 2012 demonstrated the increasing vulnerability of communities to a hazard turning into a disaster. The lives and livelihoods of the affected communities were seriously disrupted beyond their capacity to cope or withstand using their own resources, with the result that affected populations suffer serious human, material, economic or environmental losses. Communities are predisposed to disasters by a combination of factors such as poverty, aridity, settlement in areas prone to perennial flooding or areas with poor infrastructure and services such as the informal urban settlements or even living in poorly constructed buildings. Wild fires are responsible for colossal losses to our forests and other land resources as well as economic losses to buildings and properties in urban centres and markets. The

country needs to improve on its disaster management framework and strategies with appropriate policy and legislative provisions.

#### ***Policy Statements***

The Government will:

1. Prepare comprehensive hazard maps and vulnerability analysis for the country.
2. Implement the National Disaster Preparedness Framework and Plan at national and state levels.
3. Develop National Disaster Risk Reduction (DRR) Information and Communication System.
4. Develop capacity for undertaking risk identification, monitoring and assessment.
5. Establish mechanisms and strengthen capacities for hazard detection, prediction and forecasting at national, state and community levels.
6. Design and implementation of a coordinated national awareness creation and advocacy programme.
7. Mainstream gender in disaster risk reduction, policy, planning and legal frameworks.
8. Formulate and implement disaster risk management capacity programmes for relevant national institutions.
9. Domesticate globally-agreed frameworks for DRR, including but not limited to the Sendai Framework for Disaster Risk Reduction 2015 – 2030.

#### **6.4 Conflicts and Environment**

Conflict is an integral part of life and living. Conflicts have directly affected a large proportion of the country for the last 20 years, and hence greatly influenced its development. The Niger Delta situation in Nigeria is such a pathetic one due to the degree of devastation it has witnessed over the years. Conflicts often arise from the environment locally but they usually have national, regional and international dimensions at one point or the other. Livelihood and resource issues often generate crisis particularly when the same are inadequate or not evenly distributed. The current crisis in the northeastern part of country is also resource-induced. The conflict is characterized by campaign carried out by the military and insurgents/militias over large areas, resulting in a significant number of civilian deaths, the widespread destruction of villages and forests, and the displacement of victims into camps for protection, food and water. The environmental impacts of conflicts could be direct or indirect. Direct impacts include: (i) landmines and explosive remnants of war; (ii) destroyed target-related impacts; (iii) defensive works; and (iv) targeted natural resource destruction. Indirect and secondary impacts include: (i) environmental impacts related to population displacement; (ii) natural resource looting and war economy resource extraction; (iii) environmental governance and information vacuum; and (iv) funding crises, arrested development and conservation programmes.

The 1999 United Nations Environmental Programme (UNEP) report provided the nexus between deteriorating environmental conditions, inadequate resources and conflicts. The report concluded that resource depletion issues such as pollution, soil erosion, desertification, deforestation, flooding and even gas flare are some of the regular causal factors for direct and indirect local, national and global conflicts especially in Nigeria like every developing country. Hence the need to carry along environmental consideration in finding solutions to conflicts.

### ***Policy Statements***

The Government will:

1. Conduct in-depth analysis of the impacts of conflicts on the environment and develop, as well as implement appropriate mitigation strategies.
2. Conduct a specific environmental assessment for the conflict regions as soon as security conditions and political stability permit.
3. Ensure environmental governance is included as a long-term goal for peace building and conflict mitigation in situations where there is conflict over natural resources.
4. Promote the development and implementation of environmental governance for peace building and resilient livelihoods programmes/projects.
5. Undertake reintegration, rehabilitation and recovery (RRR) and disarmament, demobilization and reintegration (DDR) in a way that promotes the integration of the returnee/demobilized combatant into the local context of environmental governance.
6. Establish and sustain national mechanisms for conflict resolution.
7. Mainstream environmental concerns into conflicts resolution mechanisms and peace building institutions.

## **6.5 Genetically Modified Organisms (GMO) & Biosafety**

There are pressures on environmental resources including conservation and utilization of genetic resources. Population growth and land use changes continue to put pressure on our biodiversity. Local agriculture is largely of the smallholder variety and depends on seed saving and sharing and requires less chemical inputs. Requirement for chemical inputs such as herbicides and pesticides, pose concerns about environmental health as these may impact soils, water bodies and non-target crops as well as non-target pests. The issue of the development of super weeds and super bugs equally raise concerns. National drive to improve on the income levels of farmers suggests that farmers have to upscale their activities, add value through food processing, utilize modern technologies, reduce drudgery of subsistence farming and get better integrated to marketing systems.

The co-existence of modern biotechnology varieties including LMOs/GMOs and non-GMO varieties is problematic as GMO varieties pose threat of biodiversity contamination and genetic erosion through cross pollination and other means of reproduction. There is a low level of awareness on GMOs and the difference between them and products of traditional biotechnology and other breeding methods. This complicates the debate on the controversial nature of modern biotechnology or GMOs. Nutrition has almost superseded hunger as a major reason for proposing the introduction of GMOs especially to tackle the deficiencies in children. This requires careful scrutiny especially with regard to alternatives and eating patterns that can tackle the prognosis.

A key pillar in biosafety considerations is the *Precautionary Principle* of the Cartagena Protocol and should be a vital guide in making decisions with regard to biosafety and Living Modified Organisms (LMOs) or GMOs. In domesticating the Protocol, the country's Biosafety Bill should be a law that is strict and protective of the nation's genetic resources.

### ***Policy Statements***

The Government will:

1. Put in place a National Biosafety Law with strict liability and redress clauses to protect the environment, farmers and communities.
2. Ensure that biosafety and biotechnology institutions operate as biodiversity protection and biotechnology research agencies and not simply as biotechnology promotion agencies.
3. Provide adequate funding for biotechnological research, especially those that do not involve cross-species genetic manipulations.
4. Develop competence in biosafety and modern biotechnology matters including on nanotechnology and synthetic biology in relation to foods.
5. Ensure teaching of ecological agriculture at all educational levels and in relevant research institutes.
6. Strictly regulate trans-boundary movement of genetically modified organisms and products and encourage development of improved crop varieties and animal breeds under ethical research environment.
7. Make public participation obligatory in matters that come for decision in relation to biosafety and GMOs.
8. Promote public awareness on biosafety through initiatives involving the community, policy makers, legislators, administrators and the private sector.
9. Requires farmers representation on all boards that are concerned with GMOs in agriculture
10. Ensure adequate criteria for risk assessments and require that such assessments be conducted in Nigeria and not offshore. This will ensure that the effect of the GMO on non-target organisms is measured with non-target organisms that exist in Nigeria and that are ecologically important here.
11. Promote organic and ecologically sound agricultural practices that suit the holistic nature of local agricultural practices that are not disruptive and are inclusive of economic, social, cultural and gender considerations.
12. Control the reliance of farmers on artificial inputs including herbicides and pesticides that are harmful to the environment.
13. Promote agriculture that preserves biodiversity and ensures safe food and other good quality products.



## 7. Cross-sectoral Issues

### 7.1 Population and Human Settlement

With a population of about 170 million people that is growing at the rate 3.2% per annum, Nigeria faces the challenge of serious population impact on its environmental resources. Nigeria ranks among the most urbanized countries in the world. In 1980 the urbanization rate was 28.6 percent rising to 35.3 percent in 1999 and 49.8% in 2010 with the rate projected to increase to 56.8 percent and 63.6 percent in 2020 and 2030 respectively. A significant characteristic of the macro-economic context of human settlements development is urban decay which manifests as slums and squatter settlements in the country's cities and towns. The pace of urbanization has been such that maintenance of modest environmental standards inevitably had to lag behind. Furthermore, many urban areas are in a state of squalor and over-crowdedness characterized by decrepit structures, poor sanitary conditions, over-crowding, and under-provision of amenities and general deterioration of the urban environment. The functionality of most urban areas is thus reduced in addition to exerting adverse impacts on households, macro-economic performance and social well-being. On the other hand, the indiscriminate conversion of rural land to urban uses without proper planning and implementation of EIA as well as the attendant consequences of developmental initiatives on the rural environment cannot be overemphasized. The government acknowledges that the current situation poses a major challenge to economic growth and sustainable development, and notes that for environmental sustainability, there is need to maintain a balance between population growth, settlement pattern and the environment. The rapid and unplanned urbanization has to be brought into check to reduce its negative impact on the country's environmental sustainability.

#### *Policy Statements*

The Government will:

1. Implement the housing policy that take into account environmental consideration
2. Review and implement the 2004 National Population Policy.
3. Strengthen the effectiveness of the national housing fund.
4. Provide guidelines for environmentally sound master plans for urban development, industrial and rural settlement
5. Develop and implement an integrated housing policy that embraces strategic environmental assessment (SEA) and EIA.
6. Implement housing policy for environment friendly considerations, with emphasis on sustainable vertical growth in rural and urban development.
7. Encourage further research into and promote the use of locally produced building materials as a means of reducing building costs without compromising environmental concerns.

### 7.2 Environmental Health and Safety

Life depends on a clean and healthy environment. Low environmental standards lead to reduced life expectancy. In terms of environmental health, air and water borne diseases are associated with air and water pollution, sanitation, personal hygiene, waste disposal, and chemical and food safety. Other disease such as malaria, cholera, typhoid and Ebola are caused through exposure to harmful

environment. The Environmental Health sector suffers from (i) lack of cooperation between the health sector and other sectors in including a component of primary health care; (ii) weak local capacity of villages, townships and other authorities to promote health care services; (iii) lack of provision of safety and health codes for use in various sectors of the economy; and (iv) low-level standard of environmental health services and conditions relating to water supply, sewages, solid waste, pollution control and green areas housing. There is prevalence of environmental related diseases such as malaria and typhoid. Environmental Health and Safety (EHS), therefore, constitutes a major aspect of this Policy

***Policy Statements***

The government will:

1. Review and implement the National Environmental Health Action Plan (NEHAP)
2. Institutionalize environmental audit, including health and safety surveillance in industries
3. Improve the management and conservation of water supply sources.
4. Promote technologies for efficient and safe water use, especially in respect of waste water, use and recycling.
5. Enhance the provision of occupational health and safety services
6. Provide incentives for private sector investment and development of appropriate water and sanitation technologies and infrastructure for waste management.
7. Promote Environmental Health Impact Analysis (EHIA) as a component of ELA for all development activities.
8. Promote capacity building in the field of impact analysis.
9. Encourage and promote the use of appropriate technology and local expertise to raise community awareness, standards of health and safety education.
10. Ensure compliance of the 2014 National Policy on food safety and its implementation strategy.

### **7.3 Energy**

Energy is essential for development. Deliberate efforts have been made by the Government to provide power to all Nigerians in order to spur development and improve livelihoods. The main sources for the country's power production are Hydropower, Petroleum and Natural Gas. It is projected that the country's energy requirements will substantially increase. Ensure compliance of the 2014 National Policy on food safety and its implementation strategy. There are multiple energy sources, and the technical processes for harnessing and usage and impact on the environment vary from one energy type to another. The 2015 Policy Guidelines on Energy takes cognisance of the need to protect the quality of the environment and the population from hazards of energy exploitation and utilisation. It further aims at improving the nation's technical capabilities in the energy sector for the State security, self reliance and economic competitiveness, with increasing emphasis on renewable energy to facilitate green economic growth.

***Policy Statements***

The Government will:

1. Implement the National Policy on Renewable Energy
2. Develop and promote an integrated national strategy for sustainable utilization of renewable

energy.

3. Promote adaptation of the cleaner production concept in all energy production and consumption activities.
4. Develop and implement energy efficiency programmes in different sectors of the economy, as well as public and private buildings.
5. Domestic regional and globally-agreed renewable and energy efficiency policies, plans and strategies, including but not limited to the ECOWAS Renewable Energy Plan.
6. Promote the use of energy forms that are environmentally safe and sustainable.
7. Support capacity building to enhance sustainable use and monitoring of energy resources.
8. Ensure that all development activities conform to Strategic Environmental Assessment and Environmental Impact Assessment.

#### **7.4 Infrastructure (Transport, ICT, Housing etc)**

Infrastructure represents the totality of interconnected human-made physical facilities necessary for meaningful human existence and the attendant enjoyment of natural and artificial environment. In this context, infrastructure incorporates a whole lot of utilities including but not limited to transportation (road, air or sea), information communication technology (ICTs), housing, water and sewerage.

The environmental impact of infrastructural development is at once positive and negative particularly in relation to the activities that culminate in bringing them into reality, while ensuring adequate transportation and housing, roads, parks, rails and terminals be necessarily constructed. Depending on the quantum or degree of such initiatives being embarked upon, the environment and people are impacted one way or the other.

Transport, ICT and Housing are essential to human existence and for commerce as well as goods and peoples will have to move from one point to the other. Similarly, information is crucial to sustainable development and is the cornerstone of planning and decision-making. Satellite and remote-sensing equipments are capable of enhancing capability to capture environmental status, trends, remote sensing, geographical information systems (GIS) and similar mechanisms have created new frontiers for data generation, integration, analysis, modelling, map production and preservation with little or no stress. Communication, information and associated ideas as well as access to them and to markets, employment, schools and other facilities and land use *inter* and *intra*, within and between peoples, offices, structures, cities and rural areas take place every minute, every hour and every day. The transportation sector, like its ICTs and housing counterparts, is a major consumer of non-renewable energy and land and is a major contributor to pollution, congestion and accidents. Integration of the transport, ICTs and housing systems policies and planning in line with contemporary practices will undoubtedly alleviate negative impacts of existing amorphous transport, communication and housing systems on the Nigerian environment while giving way to a much more modern, accessible, affordable, safe and efficient transport, ICTs and housing initiatives.

#### ***Policy Statements***

The Government will:

1. Develop and implement environmental-friendly National Infrastructural Development Strategies

& Actions Plan;

2. Support an integrated transport policy that explores the full array of technical and management options and pays due attention to the needs of all population groups (e.g. the physically challenged, poor and the aged)
3. Initiate and sustain modern and environment-friendly transport, ICTs and Housing policies with emphasis on efficiency and effectiveness.
4. Develop a National Strategy on Environmental Education and ICTs Curriculum and Public Awareness;
5. Establish and strengthen environmental and ICTs Resource Centres at all levels.
6. Ensure the mandatory implementation of a detailed Environment Impact Assessment of major infrastructure projects.
7. Ensure that remedial measures to mitigate the negative impact of major projects on the environment are built into the project.
8. Implement post-construction environmental audits that ensure that the in-built mitigating measures satisfactorily address the anticipated environmental concerns.
9. Introduce stringent quality standards for various construction materials in order to guarantee the structural stability and durability of facilities.
10. Minimize negative environmental impact by prescribing processes and materials to be utilized for infrastructure projects, ensuring that they meet minimum standards for: (i) noise abatement, (ii) reduction of vibrations, (iii) reduction of dust pollution, (iv) careful handling and disposal of spent oils, fuels, etc., (v) minimisation of noxious gas emissions (CO, SO, NO<sub>x</sub>, etc.), (vi) reduction of erosion, flooding, landslides, etc., and habitat destruction, and (vii) conservation of local ecological resources.
11. Ensure the safety of workers engaged in infrastructure projects by the provision and insistence on the use of appropriate personal protective equipment (PPE), and the adoption of other safe practices.
12. Establish contingency plans for rescue operations in case of site and operational accidents;
13. Ensure that construction design and implementation are carried out in such a way as to minimize undesirable micro-climatic, geologic/geomorphologic and other man-induced impacts such as fires, landslides, earth flows, gullies, debris avalanches, accelerated erosion, flood, etc.;
14. Prescribe a minimum quality level of aesthetics around infrastructure and ensuring good drainage, landscaping, sound insulation, ventilation, easy accessibility for purposes of fire fighting, rescue operations, waste collection and emergency evacuation, etc.
15. Prescribe quality standards which ensure that projects do not compromise or alter existing land use, for example, through undue encroachment on valuable agricultural lands and does not detract from the beauty of the natural built-up environment.

## **7.5 Trade and Environment**

Trade is an important driver of economic growth, but also with potential significant effects on the environment, particularly in this era of globalization which has in part reduced barriers to international trade and investment flows. Nigeria thrives on liberal trade regime with its attendant trade-offs, economic benefits, environmental impacts and social dimensions coupled with conservation and protection of environmental resources in line with comparative international standards and the need to reconcile the benefits of multilateral trading arena with greater environmental protection. The nation is

understandably committed to regional, continental and international trade, and like many less-developed countries, is still heavily engaged in natural resources exploitation, and hence has a direct interest in natural resource-related trade questions.

The main thrust of Nigeria's external trade policy objective is to achieve economic development through the attainment of healthy balance of payments, market expansion, net inflow of foreign exchange and the protection of infant industries. To attain these goals in the face of new and tougher environmental criteria confronting it in international markets, Nigeria will have to continually adapt to the environmental requirements of its major markets to remain competitive, particularly given both the direct and indirect effects of trade on the Nigerian environment and people. Thus, while Nigeria is committed to trade at regional and international levels, it is also concerned about the need to take into consideration the trade-offs between economic gains, environmental impacts and social effects in the implementation of multilateral trading systems. Consequently, trade liberalization within the framework of sustainable development and its contribution to poverty reduction remains a priority concern for the Government.

#### ***Policy Statements***

The Government will:

1. Mainstream environmental considerations into the National Trade Policy.
2. Ensure that issues on environment are integrated into the domestication of international and regional trade agreements.
3. Promote and support capacity building in the field of trade and environment.
4. Provide relevant environmental information and advice to importers and exporters with respect to the requirement of the International Organisation of Standardization (ISO).
5. Ensure that all export projects conform to EIA process and procedures.
6. Provide, on a continuous basis, necessary and desirable assistance to exporters on environmentally friendly product development and financing.
7. Support the harmonisation of product standards, including environmental product standards among ECOWAS member countries not only for the purpose of increasing trade among them, but also with the rest of the world.
8. Promote the use of recyclable, re-usable and returnable materials in packaging.
9. Encourage eco-labeling of products.

## **7.6 Poverty**

Despite its enormous natural wealth, Nigeria remains a poor country. About 69% of Nigerians are estimated to be living below the poverty level of USD2/day. Poor households rely disproportionately on natural resources and the environment for their livelihoods and income. The poor are more vulnerable to disasters such as droughts, floods, and gully erosion and to the impacts of climate change. On a broader scale, natural resources such as forests and fisheries play a larger role in the national income and wealth of less developed economies.

In the process of exploration and production, the natural environment is polluted and livelihoods extinguished to the extent that poverty becomes more pronounced. There is a correlation between

poverty and conflict because a people whose environment has been degraded and means of livelihood destroyed will certainly create conflict. Income generated as a result of environmental exploitation is never evenly distributed among the people.

There are many cases where poverty and perceived lack of alternative income sources will lead to environmental degradation. In both urban and rural areas, local population growth puts strain on certain resources and contributes to local ecological decline.

The reversal of the negative poverty/environmental linkages will depend not only on improved environmental management and profitable livelihoods, but also on a supportive enabling framework. Consequently, empowerment and capacity building, good governance, resource tenure, education and awareness will be as important in changing the negative linkages into positive ones as will be access to credit, or improved soil conservation and tree planting techniques.

#### ***Policy Statements***

The Government will:

1. Mainstream environment concerns into poverty reduction programmes.
2. Develop and implement an environment-friendly job-creation initiative for poverty reduction and green growth development.
3. Promote local food production through investments, technical capacity transfers and technological innovations
4. Strengthen capacity of rural communities to have improved access to productive assets, including access to micro-credits and local and international market opportunities.
5. Encourage public-private sector partnership in the sustainable management of natural resources for poverty reduction.

### **7.7 Gender**

Gender is a basic component of human development. It is a fundamental organizing principle in all societies, central in determining access to and ownership of resources and participation in the development process and mediates human/environment interactions and all environmental use, knowledge, and assessment. Gender roles, responsibilities, expectations, norms, and the division of labor shape all forms of human relationships to the environment. It is no doubt that many women-related economic and social activities depend on environmental resources, despite this, women are denied access to effective and sustainable use of forest resources, and they have limited or no control over land, capital, and labour. There is a correlation between poverty and conflict because a people whose environment has been degraded and means of livelihood destroyed will certainly create conflict. For sustainable development, access and ownership of natural resources should be enhanced for all gender, people living with disabilities, marginalized and minority groups.

### ***Policy Statements***

The government will:

1. Ensure gender is mainstreamed into environmental concerns at all times
2. Promote review of related environmental policies and acts to include gender concerns
3. Provide incentives for environmental programmes and initiatives that target under represented gender and other vulnerable groups.
4. Facilitate full participation of women, men, girls and boys and other vulnerable groups in decision making processes in environmental governance and management
5. Ensure the participation of women and other vulnerable groups across all sections of society in environmental trainings, public awareness and sensitization campaigns.
6. Continue to support the implementation of the country's gender policy.

## **7.8 Production and Consumption Patterns**

Sustainable development as a concept grew out of the realization that modes of production and consumption be designed to meet the needs of the present, without compromising the ability of future generations to meet their own needs. It therefore requires a sense of responsibility and stewardship in the usage and replenishment of nature's gifts to humankind.

It has also been established that the available resources on planet Earth cannot sustain current consumption rates especially as in the global North and other industrializing nations. Unless something is done we are pushing towards planetary limits whereby living on the same consumption platform would be unsustainable.

The challenge to humans, especially with regard to non-renewable resources is on how to place limits to competition, production and consumption while ensuring access and avoiding violent conflicts. In particular, there is the critical challenge of growing the economy, creating employment, building markets and building much-needed infrastructure within our ecological limits to avoid environmental catastrophe. Thus, there should be an intergenerational justice that can help change production modes and curtail consumption of natural and manufactured products.

### ***Policy Statements***

The Government will:

1. Promote production and consumption patterns that have minimal environmental footprints
2. Internalize environmental costs into economic transactions to cater for environmental restoration and compensation to local communities for harms suffered.
3. Reduce environmentally polluting production activities.
4. Study changing patterns of production and consumption triggered by globalization and assess relevance and contribution to national well being.
5. Reduce wastes and ensure recycling and re-use of materials and products.
6. Promote public awareness on economic and environmental impacts of wasteful production and consumption patterns.
7. Encourage efficiency in resource utilization including promoting the production of durable goods

rather than the global disposable culture.

8. Support consumer organisations and ensure they are adequately represented in consumption policy processes.
9. Public procurement should steer towards environmentally sound products and services.
10. Incentivize investment in efficient, clean and environment friendly technologies.
11. Promote a shift from dirty energy to clean renewable energy options.
12. Restrict and/or tax the use of polluting non-biodegradable consumer products including plastic shopping bags.
13. Ensure implementation of Environmental Management Plan (EMP) and establishment of Environmental Management Systems( EMS) by all industrial production facilities.

## **7.9 Environmental Education and Awareness Creation**

Nigerians are poorly aware of their environment and the damages being done to it through various activities like settlement expansion, bush burning, littering/open dumping of human waste, polluting rivers with sewage among others. Also the changing climatic patterns and their increasingly grievous consequences are little appreciated. There is no established environmental protocol or information system for Government Executives, parents, teachers and the youth, to enable them access environmental information. The current provisions in national educational curricular, as well as R&D programmes are inadequate in providing environmental awareness. In addition, there is the challenge of weak environmental legislation and enforcement to coordinate environmental planning and action.

Given the world's increasing technological sophistication and the close interaction between technological progress and environmental concerns, there is a need to develop an environmentally literate citizenry. Formal and informal environmental education would be effective means to involve creating appropriate awareness of critical environmental issues. In particular, formal education is important to increase awareness, improve extension services, sensitize people on environmental issues and build institutional capacities. Non- formal environmental education benefits people outside the formal education system. Communication of environmental information to all stakeholders is still a challenge. Public awareness empowers the public to develop a strong sense of responsibility on environmental issues.

### ***Policy Statements***

The Government will:

1. Develop and implement a National Strategy on Environmental Education and Public Awareness.
2. Undertake a comprehensive curriculum review that integrates environment and development concepts in education curricular at primary, secondary and tertiary levels Encourage gender balance education in all issues of environment.
3. Document, disseminate and encourage the use of indigenous knowledge in environmental protection and conservation.
4. Train and retrain teachers and administrators and educational planners in environmental education issues.
5. Establish and strengthen environmental education resource centres at all levels.
6. Implement innovative public environmental education programmes.



## 8. Policy Implementation

### 8.1 Legal Framework

The purpose of a legal framework as an integral part of a National Environmental Policy is to consolidate, strengthen, provide and extend legislation for environmental protection and improvement in all spheres whilst also providing for effective implementation and enforcement procedures.

The Constitution is the basic law of the land and it proclaims its supremacy over and above all other laws in the country and any law that is inconsistent with any of its provisions shall be null and void to the extent of its inconsistency. The relevance of the Constitution to environment lies in the fact that it should lay the foundation for the legal framework for the enforcement and protection of the environment by empowering the citizens to have legal standing and access to justice to be able to protect and enforce the protection of a clean and healthy environment for sustainable development.

The 1999 Constitution in its section 20, contained in Chapter 2 under 'Fundamental Objectives and Directives Principles of State Policies' provides that: "The State shall protect and improve the environment and safeguard the water, air and land, forest and wild life of Nigeria"

Similarly, the National Action Plan for the Promotion and Protection of Human Rights in Nigeria, November, 2002 at page 52, recognises the right to environment and states that the Federal Government has the following constitutional obligations, namely that Government recognizes that everyone in Nigeria has the right to (i) an environment that is not harmful to her or his health or well being; (ii) have the environment protected, for the good of present and future generations through reasonable laws and other way of; (iii) preventing pollution and ecological degradation; (iv) promoting conservation and; (v) securing ecologically sustainable development and use of our natural resources, while at the same time promoting valid economic and social development.

More specifically, the Nigerian constitutional provision on environmental protection as at now is too tokenistic and inadequate. Likewise, other extant environmental laws, including related laws, policies and regulations, require revision, harmonisation and updating in line with global best standards and practices.

This policy shall be put in its proper legal context for effectiveness and impact. The publication of this policy and response strategy shall provide the basis for the institutional framework for climate change management in Nigeria. A legal framework shall be established through an Act of Parliament with provisions for the consistent implementation of this Policy to make the Nigerian environment sustainable.

#### ***Policy Statements***

The Government will:

1. Take measures to promote and safeguard the Constitutional right and obligation of the government and citizens to a clean and healthy environment.
2. Ensure the enactment of a streamlined comprehensive Environmental Management Act within the provisions of the Constitution for sound management of the environment

3. Ensure harmonization of sectoral laws with the Environmental Management Act and their implementation.
4. Partner with relevant sectors to ensure review and harmonization of related extant environmental policies , laws and regulations in line with current and emerging global issues, best standards and practices.
5. Partner/support the development of professional bodies to standardize practice and promote quality in the environmental management and governance to achieve the goals of this policy.

## 8.2 Institutional/Governance Framework

In the process of implementing this Policy, the Nigerian environmental governance structures exemplified in the Federal Ministry of Environment, its agencies, State Governments and their agencies and the Local Government areas as well as existing policy and legal machineries will be overhauled and reformed to ensure a more effective, efficient, result-oriented environmental protection and sustainable development for the country.

The institutional architecture for the protection of environment in Nigeria atop of which is the Federal Ministry of Environment, more than ever before, will be strengthened for greater capacity, synergy, understanding, coordination, cooperation and collaboration given the interconnectivity, universality and conterminous nature of the environment and the necessity to take environmental considerations in all development initiatives into cognizance.

### *Policy Statements*

The Government will:

1. Develop a National Environmental Action Plan to ensure successful translation of the policy into action with clear objectives, strategies, set targets and timelines for every one of the six strategic priority. The plan will focus on and prioritize goals and objectives detailing clear roles and responsibilities of government and other stakeholders.
2. Constitute a Technical Monitoring & Advisory Team (TMAT) comprising of professional and technical engine room of the implementation process, to be domiciled in the Federal Ministry of Environment
3. Strengthen the Department of Planning Research and Statistics (DPRS) of the Federal Ministry of Environment to support the Minister in his oversight role in environmental policy formulation, to monitor the implementation of the policy in relation to other sectoral policies and report to the National Council on Environment.
4. Strengthen the capacities of relevant designated national institutions and agencies responsible for the general supervision and coordination in all matters related to the environment.
5. Streamline and strengthen the capacity of environmental institutions at the national, State and community levels so as to make them more effective and participatory.

### 8.3 Funding

Environmental protection is an expensive business, but finance should not be an excuse for not protecting the environment. However, the cost of not protecting the environment is much higher because of the direct and multiplier effects on the national economy and socio-cultural life.

The bulk of the finance of environmental protection should ideally come from government coffers to ensure the non-interference by resource interests that may work against those of the nation. Multilateral and donor funding avenues are also available and these should be accessed without being allowed to affect the nation's negotiation principles especially with regard to the CBD, UNFCCC and others directly or indirectly related to the environment.

#### *Policy Statements*

The Government shall:

1. Ensure adequate annual budgetary provisions for environmental management and protection needs at all tiers of governance.
2. Ensure that environmental costs are integrated into economic transactions and create a mechanism for accessing and utilizing such funds for environmental protection.
3. Ensure that existing funding mechanisms, including the Ecological Fund, are responsive to needs and are applied strictly for the purposes for which they have been designated.
4. Encourage corporate entities and individuals to contribute to an Environment Endowment Fund that would be applied to emergency responses to environmental incidents, excluding those for which the polluters-pays principle applies and those where incidents are caused by persons and bodies who must bear the costs of such accidents.
5. Generate funds from special fines and taxes on activities that deplete natural resources, ensuring that such fines or taxes are comparable to the economic values of the depleted or wasted resources and are used for the replenishing of the resources.
6. Support civil society groups as environmental monitors and ensure compliance as well as create general environmental awareness.

### 8.4 Science, Technology and Innovation

Science and technology contributes to sustainable development efforts, including the wellbeing and improved quality of life for the country's citizens. Scientific progress and technological development are major forces underlying improvements in productivity and living standards. New technologies offer considerable promise for decoupling economic growth from long-term environmental degradation. Also, innovations will appear when and where they are most needed, or at a price that reflects all environmental and social externalities associated with their deployment within a conducive policy environment.

#### *Policy Statements*

The Government will:

1. Support the creation of a policy environment that encourage Research and development (R & D), provides the right signals to innovators and users of technology processes, both domestically and internationally; to fund basic research; and to support private initiatives in an appropriate

manner:

2. Support incentives to local knowledge development, innovate and diffuse technologies that support sustainable development objectives.
3. Support long-term basic research through funding and efforts to build capacity for increased research on ecosystems, the value of the services they provide, the long-term impact of human activity on the environment and the employment effects of new technologies.
4. Work with relevant MDAs and CSOs to address unintended environmental and social consequences of technology by separating technology promotion responsibilities from those on health, safety and environmental protection.
5. Support applied research activities for the protection of the environment.
6. Co-operating with the private sector and communities to develop and diffuse environment friendly new technologies and innovations.

## **8.5 Partnership and Multi-Stakeholders Involvement including the role of Civil Societies**

A strict observance of the principle of subsidiarity is very vital to the implementation of this policy. Without citizens buy-in environmental protection and sustainable development would not happen. Citizens are best defenders of their environments as they have the historical memories and knowledge about their environment and resources therein.

Civil society groups play a bridging role with communities, are close to the grassroots and are in the position to take messages both ways. Without close links and trust community entry points can easily become blocked and the best intentions of government can become suspect.

Lack of access to adequate, understandable and timely information creates mistrust and suspicion and can be major stumbling blocks to project or environmental programme implementation. Community participation is crucial in building partnerships and creates opportunity for sustainable local knowledge to be integrated into public policies and programmes. Gender balance and inclusion is essential for successful partnerships.

### ***Policy Statements***

The Government will:

1. Create broad awareness around the National Environment Policy as well as targeted awareness on specific components of the policy with particular stakeholders.
2. Hold regular public briefings and stakeholders consultations on the implementation of specific policies including the challenges encountered.
3. Ensure coordinated engagement with all stakeholders in order to achieve an integrated and holistic implementation of the policy.
4. Promote empowerment of stakeholders through provision of information in easy to understand formats and through citizens friendly media.
5. Consciously build on experiences gained from engagement with stakeholders in the process of policy implementation.
6. Utilize existing institutional mechanisms and ensure inclusion of appropriate civil society and

community representatives on relevant boards and committees

7. Work with relevant NGOs, CSOs and CBOs to drive advocacy on value of biodiversity in resilience building as well as in monitoring activities that could negatively impact on the environment.
8. Consider relevant NGOs, CSOs and CBOs as critical parts of national delegations to regional and multilateral negotiations.
9. Empower citizens to participate and take action in environmental issues.
10. Ensure transparency in practices and dealings with stakeholders.

## **8.6 Regional and International cooperation**

The environment can be considered as part of the global commons as some of the cycles and mechanisms of nature operate across national boundaries. Actions in one nation often have direct impacts on another.

International treaties and conventions help secure rational utilization of common resources as well as common and efficient tackling of environmental issues including global warming and biodiversity conservation. Nigeria is party to a handful of regional and international agreements.

Cooperation between nations, within regions and internationally are essential for protection of environmental resources and for the peaceful enjoyment of such resources in a sustainable manner. The River Niger, for example, originates from Guinea, extends over a distance of 4,180 km passing through Mali, Niger Republic and Nigeria.

Regional and international cooperation make for sharing of knowledge, responsibilities, expertise and technical knowhow in tackling environmental challenges. A lack of cooperation between countries could lead to resource conflicts, regional instability and unsustainable utilization of environmental resources.

### ***Policy Statements***

The Government will:

1. Identify clear national interests including areas of resource endowment, national priorities and expertise in regional and international cooperation.
2. Ensure that regional and international policies are not in conflict with national policies.
3. Participate in multilateral negotiations and fulfill agreed obligations including those of finance.
4. Maintain a roster of multilateral agreements on the environment entered into by Nigeria.
5. Ensure the creation and maintenance of mechanisms for coordinated and consistent implementation, monitoring and evaluation of regional and multilateral agreements.
6. Provide or mobilise funds for the implementation of agreements including for ensuring transboundary environmental controls and protection for sustainable resource utilization.

## **8.7 Monitoring and Evaluation**

Monitoring and assessment of environmental change is critical to ensure the effective implementation of this Policy. The Federal Ministry of the Environment, as the responsible coordinating Ministry will

define review mechanisms as well as a process to develop a Monitoring and Evaluation System that will ensure that climate change impacts are monitored appropriately. To this end, the Government will in the short-term design and publish a draft Environmental Monitoring and Evaluation System, which can be linked to the national environmental information system and used for reporting and verification requirements for the implementation of this Policy.

#### *Policy Statements*

The Government will:

1. Establish and sustain a National Environmental Data Collection and Information System coordinated by the Department of Planning Research and Statistics (DPRS) of the Federal Ministry of Environment, and with inputs from relevant MDAs such as NIMET, Nigerian Hydrological Services Agency (NIHSA) and NASRDA.
2. Establish and sustain a national environmental monitoring and information management network.
3. Prepare biennial public reports on the state of the environment.
4. Establish strategic brainstorming forum for sharing of experiences and lessons on the Implementation process.
5. Promote broad-based multi-stakeholder participation to include publication and dissemination of the National Policy as well as periodic sector performance evaluation reports

## 9. Implementation Strategies and Actions

### 9.1 Mainstreaming Environmental Concerns into Policy, Planning and Development processes

Mainstreaming environmental considerations in all national and relevant sectoral policies, planning and development processes is critical if this Policy is to achieve its goal and objectives. The Federal Ministry of Environment will need to take the leadership role in ensuring that all national and all sectoral policy planning and development processes mainstream environmental considerations, working closely with relevant MDAs, including the National Planning Commission.

#### ***Policy Statements***

The Government will:

1. Institutionalize cooperative governance and integrated approach to the management of the environment and natural resources by explicitly identifying and integrating environmental considerations in relevant sectoral and cross-sectoral policies, laws, planning and development process.
2. Ensure synergies between Vision 20:2020 and this Policy and National and State Development planning.
3. Institutionalize strategic environmental assessments approaches to all policies, programmes and plans.
4. Ensure that all significant development projects are subjected to environmental impact assessment.

### 9.2 Roles and Responsibilities

The environment is a complex interwoven system. Its management requires that hands are on deck to avoid or minimize the “tragedy of the common”. Thus the implementation of this Policy involves many different groups, including private sector, civil society organizations, local communities, the public and government agencies at local, state, national and regional levels. A key element is defining the roles and responsibilities of the various groups within the environmental governance structure that will be utilized for the implementation of the Policy.

#### ***Policy Statements***

The Government shall:

1. Strengthen the capacity of the Department of Planning Research and Statistics in collaboration with other relevant technical Departments in the Federal Ministry of Environment to play the oversight role of monitoring the implementation of this policy.
2. Strengthen the capacity on Department of Environmental Assessment in the Federal Ministry of Environment to further strengthen the EIA/SEA process so as to ensure that sector policies, plans and programmes are subject to ESIA/SEA
3. Develop and implement delegation instruments to provide a framework for cooperative and collaborative management between the Federal Ministry of Environment, other Ministries, Departments and Agencies (MDAs).
4. Strengthen the capacity of relevant environmental institutions and ministries/agencies at the

national (e.g. NESREA) and state levels so as to make them more effective in ensuring compliance and enforcement.

5. Strengthen government capacity to assess, negotiate and monitor investments, contracts, leases and concessions used for sustainable resources management
6. Strengthen national capacity in the area of environmental economics that includes natural resources accounting, development of incentives and disincentives, indicators for sustainable development and valuation of environmental goods and services
7. Strengthen the capacity of tertiary institutions as centres of learning and research for Environmental issues including monitoring and evaluation .

### **9.3 Environmental Compliance**

Compliance refers to the degree to which Nigerian laws and indeed the Nigerian authorities or the regulatory framework recognize, apply, enforce and comply with global statutes or international instruments, conventions, treaties and standards (Multilateral Environmental Agreements {MEAS}) relating to the environment within the Nigerian jurisdiction. Governments at all levels should recognise an effective monitoring and compliance with environmental laws for the various regulatory agencies , civil society groups and private citizens. .An effective monitoring and compliance with environmental laws requires the pro-active disposition of government at all levels, regulatory agencies, civil society groups and private citizens.

#### ***Policy Statements***

The Government will:

1. Design and implement a National Environmental Compliance and Enforcement Programme.
2. Enhance public private partnerships in environmental management.
3. Provide environmental education and build environmental management capability among the various stakeholders.
4. Provide economic incentives for organizations and establishments that adopt environment friendly and green technologies for sustainable development.
5. Provide incentives for compliance and punishments for non-compliance;
6. Strengthen regulatory institutions, such as NESREA to be more pro-active in monitoring compliance.
7. Build public support through public education and awareness at all levels.
8. Support and encourage civil society groups and private citizens to enforce compliance;
9. Guarantee Access to Justice including Environmental Justice, Freedom of Information and Public Interest Litigation.

### **9.4 Monitoring Compliance**

Environmental Monitoring is the series of processes, procedures and activities undertaken with a view to ascertaining the quality of the environment. It is usually carried out in preparation of environmental impact assessments and many other circumstances where human, chemical and or industrial involvements have or potentially implicate harmful consequences on the natural environment. Environmental monitoring is usually characterized by ascertainable strategies and programmes and it



usually end up with reports and outcomes with justifications that are often more than not intended to ascertain the existing condition or status of a particular environment or to establish trends in environmental parameters. The results of such monitoring are reviewed, analyzed and published. Environmental monitoring can be in relation to air quality, soil and water quality monitoring as the case may be. Its parameters incorporate five elements, namely: chemical, biological, radiological, microbiological and finally, populations.

Environmental laws, including the ESIA provisions, are tools for environmental monitoring; the laws are made to protect the environment through monitoring by specially designated agencies and persons. However, there are some flaws requiring reforms and or amendment in line with contemporary reality. For instance, the first exclusive statute on environment in Nigeria, the Harmful Wastes (Special Criminal Provisions) Act imposes life imprisonment without option of fine for carrying, depositing or dumping toxic waste in any part of the country. Effective monitoring and evaluation of environmental compliance depends on the existence of comprehensive environmental laws, competent enforcement institutions with adequate technical capacity, appropriate monitoring facilities and trained personnel.

#### ***Policy Statements***

The Government shall:

1. Design and implement a National Environmental Inspection Programme (NEIP).
2. Strengthen the capacity of the Federal Ministry of Environment to coordinate NEIP.
3. Develop and implement public private partnership in environmental management.
4. Promote negotiated agreements, self-monitoring, self-record keeping and self-reporting by various stakeholders.
5. Develop and implement a National Strategy on Access to Environmental Justice (NSAEJ).
6. Ensure an eventual passage into law of a Modern, comprehensive Environmental Laws that will incorporate contemporary principles such as remediation, polluter and user pays principles, public ownership and participation, access to information and access to justice.
7. Compile & domesticate all environmental treaties signed or ratified by Nigeria.
8. Develop contingency plans and capabilities to respond quickly and effectively to environmental emergencies
9. Build capacity of Environmental Assessment Department and other relevant Department on Eco-System Accounting
10. Periodically update state of environmental reporting.

#### **9.5: Public Participation and Partnerships.**

The key criterion for achievement of Sustainable Development is broad Public participation in decision-making. Safeguarding the environment is the responsibility of each and every Nigeria hence environmental issues are best handled with the participation of all citizens at the relevant level.

The major responsibility of Government and Non-Governmental Organisations (NGO) at this level is to assist local community become aware of their own environment and support them in Environmental management at the local level

Critical to the effective implementation of the Policy objectives, will be commitment and sincere involvement of all institutions and sectors of the society. Government, the civil society organizations (CSOs including Non-governmental organizations -NGOs), Community Based Organisations (CBOs), Faith Based Organisations, (FBOs), organized trade unions and other informal organizations are partners in the implementation of environmental policy objectives.

***Policy Statements***

The Government will:

1. Develop and implement a Strategy on Partnership and Stakeholder involvement to enhance environmental management.
2. Develop and implement a Strategy for building Environmental Management capability among the various stakeholders.,
3. Build Public support through Public education and awareness.
4. Develop a mechanism where civil groups and citizens can enforce compliance.
5. Promote investments in environmental efforts and programmes by providing appropriate fiscal and economic incentives.