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Nigerian forestry, wildlife and protected areas: Status report

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Abstract. The paper examines the Nigerian National policy on Wildlife, Forestry and Protected Areas. Though conservation efforts have a long history in the country, achievements are not encouraging. The implementation of the policy has not achieved the desired result of properly conserving the country's biodiversity; a variety of plants and animals in the country are seriously threatened today. Massive deforestation, desertification and large-scale erosion continue in various parts of the country. Various problems have been identified as obstacles to effective conservation in the country. These include the problems of inadequate data on the status of biodiversity, uncoordinated land-use policy and inadequate allocation of funds and manpower. There is also the problem of the high rate of rural and urban poverty in the country, which makes enforcement difficult. Various measures are suggested to promote better environmental forestry and wildlife conservation. These include improving the legal frameworks for conservation management in the country and expanding research into forest biology and economics. Other solutions proffered are the provision of basic education on conservation for the general population and the proper funding of protected areas and conservation programmes in the country.

Key words. Nigerian National policy, deforestation, desertification, conservation management.

INTRODUCTION

Nigeria covers a total area of 923,768 km square with a population of 140,431,790 in 2006 (NPC 2009). As a result of its large land area, the country covers different climatic and ecological zones (Fig. 1). Nigeria is rich in biodiversity, with an array of fauna and flora. This includes about 20,000 species of insects, almost 1,000 species of birds, 247 species of mammals, 123 species of reptiles, about 1,000 species of fish and about 7,895 species of plants (Federal Government of Nigeria 2001).

The policy on Forestry, Wildlife and Protected areas is part of the broad National Policy on the Environment developed in 1989 (Federal Republic of Nigeria 1989) and later revised in 1999 (Federal Government of Nigeria 2001). The main goal of the policy is to achieve sustainable development in the country with particular emphasis on the following:

- Maintaining environmental quality adequate for the health and wellbeing of all Nigerians.
- Conserving the environment and natural resources to benefit present and future generation of Nigerians.
- Restoring, maintaining and enhancing the ecosystems and ecological processes which are necessary for proper functioning of the environment.
- Raising public awareness and promoting public understanding of the important linkages between the environment and development.
- Cooperating with other countries and international organizations to preserve the environment.

Apart from the broad policy goals stated above, some specific strategies for achieving these goals in relation to the Policy on Forestry, Wildlife and Protected Areas include:

- To encourage "rational exploitation" of our forest resources to satisfy local consumption and attain a significant export level in the long term.
- Regulation of forestry activities to ensure "conservation

and environmentally sound management practices".

- Strengthening of forest protection activities in marginal areas to prevent harmful changes in such areas.
- Encouraging afforestation and reforestation programmes with the aim of reversing the effects of deforestation.
- Supporting Non-Governmental Organizations (NGOs) and tree planting programmes of local communities.
- Supporting the development of other alternative sources of energy while encouraging the development of more efficient way of wood energy utilization (Federal Republic of Nigeria 1989).

This is a regulatory policy aimed at protection and conservation. It came about because of the need to ensure the survival, protection and proper management of forests and wildlife for the use of the present and future generations.

RATIONAL BEHIND CONSERVATION

For a better understanding of the government's policy on forestry, wildlife and protected areas, it is important to consider the conditions that necessitated state intervention in this environmental issue.

First, there was the problem of increasing deforestation as a result of farming, construction and lumbering activities. There was therefore, the need to prevent the total destruction of forests in the country. Secondly, the rapid rate of soil degradation and desertification especially in marginal areas was another important reason for a positive action towards conserving the natural environment. Cultivation, cutting of firewood, and firing of the bush for farming and game was destroying the natural vegetation cover and exposing the soil to erosion. Thirdly, there was the need to control the rapid rate of destruction of wild animals especially with the increasing danger of extinction of some species. Finally, it was realized that creation of game reserves could turn such areas into tourist centres. The total forest area of all types in Nigeria was

estimated at 360,000 square km in 1975. With the reckless destruction of forests at the rate of about 600,000 hectares per year, there was the fear that timber resources would be depleted in the next few years (NEST 1992). Figure (2) shows the protected area network in Nigeria. The categories of protected areas in Nigeria today are:

NATIONAL PARKS:

These consist of areas of ecological and cultural importance where human habitation is not allowed but tourism is encouraged. Nigeria used to have eight National Parks but, this has been reduced to seven with the reversion of the Yankari National Park to a State game reserve. National Parks are managed by the Federal Ministry of Environment through the National Parks Service.

GAME RESERVES:

These include Wildlife Parks and Wildlife Sanctuaries established by State Governments to protect wildlife. There are 15 game reserves in the country today, most of which are poorly managed.

FOREST RESERVES:

Forest reserves are areas designated by state governments for the protection of timber and other forest resources. Harvesting of timber may be allowed under permit and under special concession to people in surrounding communities. Harvested timbers are mostly replaced with exotic tree species. Most of these forest reserves are also poorly managed by the various State Ministries of Agriculture and Natural Resources.

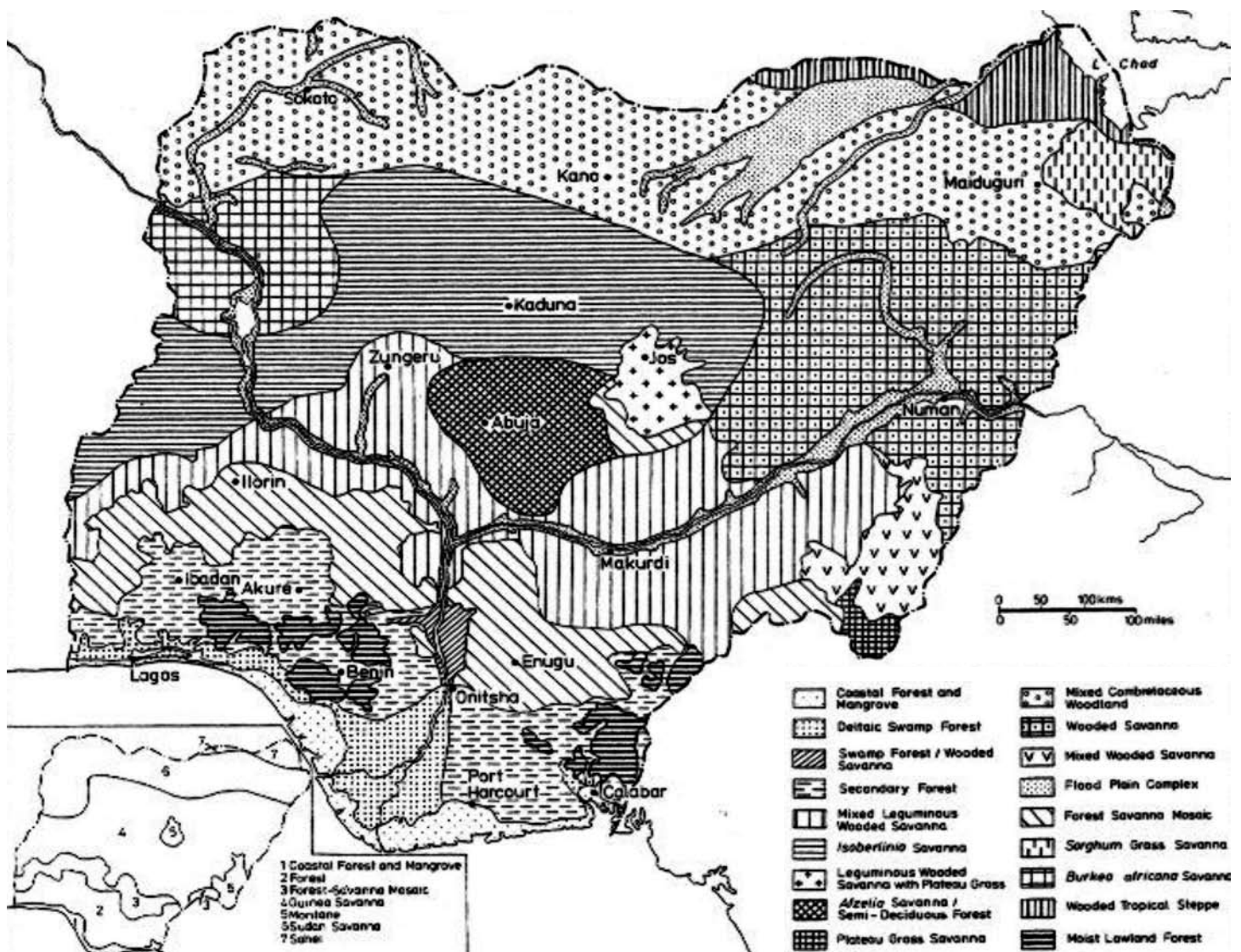


Figure 1.
Nigerian Ecological Zones. Source: Areola 1982.

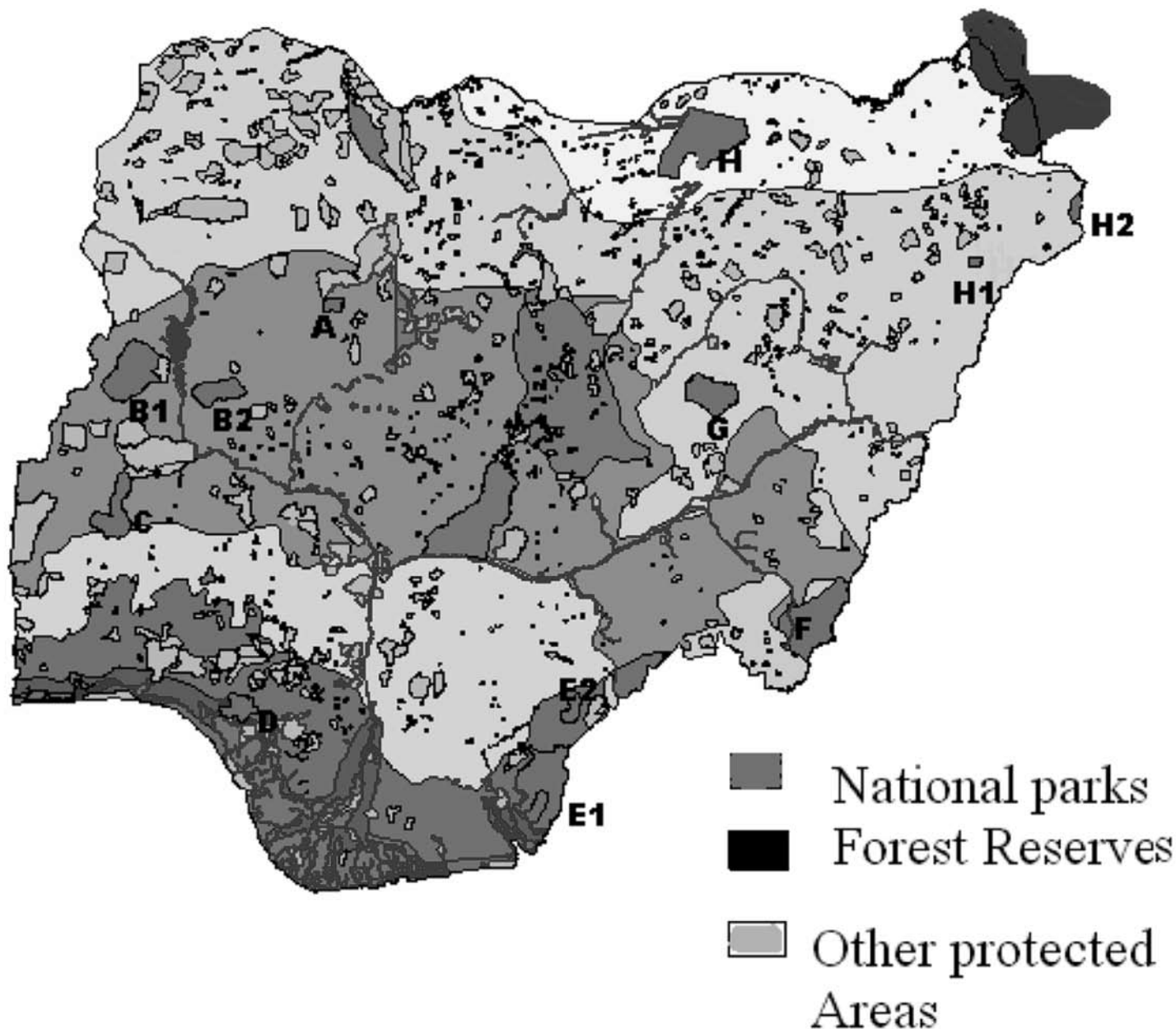


Figure 2. Nigerian Protected Areas Network.

A- Kamuku, B1- Kainji Lake (Borgu sector), B2- Kainji Lake (Zugurma sector), C- Old Oyo, D- Okomu, E1-Cross River (Oban Division), E2-Cross River (Okwango Division), F-Gashaka Gumti, G- Yankari (now reverted to state control as a game reserve) H- Chad Basin (Hadeija-Nguru Sector), H1- Chad Basin (Sambisa sector), H2- Chad Basin (Chigurme-Duguma sector). Source: Federal Government of Nigeria 2001.

BIOSPHERE RESERVES AND STRICT NATURE RESERVES:

These are areas specifically set aside within forest reserves for scientific and educational purposes. All human activities, like felling of trees, hunting and firewood collection are totally disallowed.

SPECIAL ECOSYSTEMS AND HABITATS:

These are sites revered by local communities for spiritual, recreational and other socio-economic attributes. They include groves, streams and other natural features. They are mostly found in the southern parts of the country. Their conservation

is maintained through superstitions and taboos embedded in traditional belief systems.

The implementation of conservation policies in Nigeria can be separated into the period before independence and the post-independence period.

CONSERVATION IN THE COLONIAL PERIOD

Although before independence the colonial government was more interested in ensuring a continuous supply of timber and other forest resources to its home industries,

protection of the natural environment can be traced to the early 20th century. The first forest reserve in Nigeria is the Olokemeji reserve established near Ibadan around 1900 (Onokerhoraye 1985). This was followed by the establishment of other forest reserves in various parts of what forms the present day Nigeria. In these reserves, lumbering activities were made illegal. By 1908, a Forest Ordinance promulgated by the colonial government gave protection to all commercial timber outside the reserves. Felling of timber therefore required a government permit. On the other hand, protection of wildlife began in 1916, with the Wild Animal Preservation Act in Eastern Nigeria (SFM Tropics 2005). Similar laws were enacted in western Nigeria in 1928. Game laws however, only emerged in Northern Nigeria after independence.

In 1917, the first definitive government policy on forestry came into existence. In that year, the then Governor General, Lord Lugard, stated that each province of the country must reserve a minimum of 25% of its forests. This policy statement later faced a lot of opposition in the eastern part of the country. This was because of the high population density and the resultant higher pressure on land (Egboh 1979). Resistance to reservation was least in the northern part of the country due to the lower population densities and absence of plantation agriculture. Dependence on economic trees was thus, less significant in the north. To combat the problem of bush burning a Forest Ordinance was enacted in 1937, which made it illegal to set fire to reserves. This was followed by the Bush Order of 1940, introduced to control bush burning outside the reserves (Egboh 1979).

To reduce the damaging effects of bush burning, especially in the northern parts of the country, the Forestry Department resorted to firing the bush in the reserves at the beginning of the dry season. As far back as the 1930s, efforts were made to establish plantations of trees like teak, under the supervision of management units, set up by the Northern Nigerian Forestry Department. Beginning with the planting of indigenous trees, exotic trees were introduced in the 1950s. They were expected to ensure the supply of poles, firewood and to provide windbreaks in the northern savanna zones of the country. The exotic trees were preferred because they grew faster than indigenous ones. The result was that most plantations were of Eucalyptus and Neem trees in the north and Gmelina and Teak in the south (Egboh 1979).

The colonial forestry policy in Nigeria faced a lot of implementation problems. This included the problem of shortage of European forestry officers. This problem was made more pronounced by the unwillingness of the government to train Nigerians as forest officers. In the south there were a lot of cases of illegal cultivation and

lumbering activities. People were not anxious to preserve the forests since the benefits of exploitation of timber mainly accrued to Europeans who had timber concessions. A major problem in the North was the constant clash between the Health and Forestry Departments. In an attempt to combat tsetse fly, the Health Department engaged in the clearing of woodland in affected areas. This did not go down well with the conservation efforts of the Forestry Department. This conflict took a long time to resolve between the two departments (Egboh 1979).

The British colonial Government could also be credited for spearheading the establishment of the game reserves in Nigeria. The first game reserve (Yankari) was demarcated and constituted into a game reserve in 1956, though it was opened to the public in 1962 (Federal Government of Nigeria 2001). As far back as 1932, Col. A. H. Haywood recommended the creation of game reserves in the savannah region of the country, with particular reference to Borgu/Oyo and some other areas. He further suggested the establishment of Game Departments for proper wildlife management, enforcement of wildlife laws and protection of endangered species (Federal Government of Nigeria 2001).

POST-INDEPENDENCE TRENDS.

At the time of independence in 1960, many forest reserves were already in place in the country. Many of these forest reserves were to later become game reserves. For instance, the Yankari game reserve which was opened in 1962 was a forest reserve for some time (Onokerhoraye 1985). From about 800 forest reserves and about 30 game reserves in the 1980s, the number of forest reserves in the country has now increased to 966. There are also 8 national parks, 12 strict nature reserves and 28 game reserves in the country today (Areola 1982; Federal Government of Nigeria 2001).

Apart from the establishment of a Department of Forestry at the then University College Ibadan, a Savanna Forestry Research station was established in 1964. This was a United Nations assisted programme. The Savanna Research station was established to carry out research to provide the basis for selection and afforestation of suitable areas. This station achieved a lot of success in the areas of silviculture, soil survey, forest pathology, forest economics and soil chemistry, among others (Kadeba 1978).

In various parts of the country, silviculture and plant breeding were actively engaged in by various States' Departments of Forestry, with the support of the Federal Department of Forestry. For instance, in 1976 alone, the Forestry Division of the Kwara State Ministry of Agriculture and Natural Resources (KWSMANR) planted

about 100 acres of Iroko, Obeche, Mahogany, Teak and Gmelina trees. Two hundred acres of these were planted in areas threatened by erosion. In addition, the pulpwood project financed by the Federal Government to supply raw material to the Jebba Paper Mill led to the establishment of forest plantations in Lafiaji and Jebba. Efforts were also made to establish plantations at Alagbede and Ejidongari but failed due to unsuitability of the soil (KWSMANR 1978). The combined efforts of the Departments of Forestry of both the Federal and State Governments, led to the creation of thousands of hectares of planted forests in the country. This includes about 110,000 hectares of Gmelina, 74,000 hectares of Teak, 10,000 hectares of Pine and 318,000 hectares of rubber plantations (FAO 2001; Okonofua 2005).

In line with the government policy of practicing conservation and rational exploitation, the system of agro-forestry or agro-silviculture was encouraged in some areas. Also known as the 'Taungya', this system allows the farmer to cultivate his crops and take care of the trees within the land allocated to him. This method was used in the Sapora forest reserve near Benin after the abandonment of the Tropical Shelterwood system (TSS) in the 1960s, and when introduced into the Agbara forest reserve in the then Kwara State, drastically reduced illegal farming activities in the area (KWSMANR 1978; FAO 2000).

To combat the problems of accidental and intentional fires, the forestry departments of various states have been engaging in early burning of bush around the reserves. They have also constructed fire towers and fire rides in the reserves while most state governments have promulgated edicts against bush burning.

Many of the state governments in conjunction with the Federal Government have embarked on various projects to protect and reclaim areas threatened by desertification and erosion. In the extreme northern parts of the country for example, various Shelterbelt projects have been carried out. Trees like Eucalyptus and Neem have been planted as Shelterbelts in Kano, Sokoto, Katsina and Borno States. To ensure its success in fighting desertification the Federal Government set up the National Committee on Arid Zone Afforestation in 1979. It was later replaced by the Committee on Drought and Desertification Control. Various projects involving the Federal Government and various International Organisations and other individual countries have also been embarked upon. The World Bank, the European Economic Community (now the European Union) and the Japanese Government, among others, have sponsored or assisted in various afforestation programmes.

Subsequent governments at both the Federal and state levels have launched numerous tree planting campaigns aimed

at raising consciousness on the importance of conserving the natural vegetation. Individuals and communities are encouraged to plant trees.

Wildlife protection did not enjoy the early attention given to forest conservation. This may be attributed to the wrong notion that, wild animals were plentiful and were therefore not under any threat of extinction. Another obstacle to wildlife conservation in the country was that, several communities see their surrounding areas as traditional hunting grounds. There was therefore the need to limit conservation to areas where there would be little or no local interests (Federal Government of Nigeria 2001). The creation of the first game reserve in Nigeria therefore, had to wait until 1962. However, many forest reserves in the country have now become game reserves. For instance, the Yankari game reserve was a forest reserve for a long time before, before it became a game reserve. A comprehensive survey of the country's wildlife in 1962 showed that the wildlife population was falling rapidly as a result of overhunting (Federal Government of Nigeria 2001). This resulted in the creation of other game reserves including the Borgu game reserve, Zugurma game reserve, Upper Ogun game reserve, Kanaku game reserve, Lame game reserve, Okhoma game reserve and Ohsu game reserve, among others. Some of these game reserves were later declared as National parks. For instance, Borgu Game Reserve and Zugurma Game Reserve became the Kainji Lake National Park in 1975. Other national parks later created include Yankari National Park, Old Oyo National Park, Gashaka Gumti, Chad Basin, Cross River, Okomu and Kamuku National Parks. Yankari has now reverted to the control of Bauchi State Government as a game reserve.

Apart from the major aim of protecting the animals from extinction, it was also hoped that these reserves would become important tourist centres. They are also expected to become important for scientific research (Ayodele and Falade 1990). The Wild Animal Act of 1963 gave full protection to all animals within areas designated as game reserves. Poaching and other illegal activities in the reserves were to be combated by game guards who were empowered under the law to arrest offenders for prosecution (Ajayi and Hall 1979). Wildlife conservation also benefited from the Land Use Act of 1976, the Endangered Species Decree of 1985, the National Parks Decree of 1979 which was reviewed in 1991 and 1999 and the Endangered Species Control of International Traffic Decree of 1983 (SFM Tropics 2005; Federal Republic of Nigeria 2001). The Federal Government has also continued to cooperate with local and foreign agencies in its bid to ensure the conservation and efficient management of wildlife. For instance, local conservationists have been trained by the Nigerian Conservation Fund (NCF). The Federal

Government also cooperates with other notable NGOs like the Nigerian Environment Action Study Team (NEST), Nigerian Field Society (NFS) formed in 1930, Forestry Association of Nigeria (FAN), Savanna Conservation (SC) and the Centre for Environment Renewable Natural Resources Management Research and Development (CENRAD). The World Wide Fund for Nature (WWF) based in Britain also embarked on a programme to save the white-throated monkey in the Okhoma forest in 1992. Similarly, the British Government undertook a survey of Nigerian forests at a cost of N41 million to estimate what was left of the Nigerian wildlife (Sunday Concord 1992). Recently, Birdlife International, in partnership with NCF, carried out a survey of Important Birds Areas (IBAs) in the country and prepared a draft site account directory (Birdlife International 2010).

International Organisations like the World Bank, United Nations Environmental Program (UNEP) and other foreign agencies like the Canadian International Development Agency (CIDA) and the UK Department for International Development (DFDI) are involved in funding conservation programmes in the country. Various international private foundations including MacArthur, Leventis and Ford Foundations also support conservation efforts in the country.

Nigeria is signatory to many conservation-related international conventions. These include the African Convention on the Conservation of Nature and Natural Resources (1968), the RAMSAR Convention on the Conservation of Wetlands of International Importance, especially as Waterfowl Habitat

(1971) and the Convention on International Trade in Endangered Species of Fauna and Flora (CITES 1973). Other signed conventions include the Conservation of Migratory Species of Wild Animals (1973), Framework Convention on Climate Change (1992) and Convention to Combat Desertification (1994).

To assess or evaluate the success level of these important government policies, some questions need to be answered. These include:

- How far have the strategies employed achieved the desired goal and objectives?
- What are the various problems that have been preventing the achievement of these objectives?
- What could be done in the future to ensure improvement?

POLICY IMPLICATIONS

The institutions responsible for forest and biodiversity management at both the federal and state levels are coordinated through the National Council on Environment. The National Council on Environment is thus made up of the Federal Ministry of Environment and State Commissions of Environment. There is however, no single government agency solely devoted to biodiversity conservation in the country.

The indiscriminate felling of trees has continued in virtually every part of the country. For instance, the Federal Department of Forestry (2001) estimated that Nigerian forests are being depleted at an annual rate of 3.5%. Nigeria used to have about 20% of its area covered with natural forests but, this has been reduced to about 10%. It lost about 60% of its natural

Table 1. Number of species of plants and animals threatened in Nigeria.

	Species threatened	Species found only in Nigeria
Plants	171	??
Mammals	29	3
Birds	12	3
Reptiles	3	1
Amphibians	13	5
Fresh Water Fish	21	??
Invertebrates	1	??

?? Not available. Source: USAID/Nigeria 2008.

forests to agricultural encroachment, excessive logging and urbanization between the 1960s and the year 2000 (FAO 2001). In some areas natural forest has been totally replaced with monocultures of exotic trees. Indiscriminate felling of trees has continued in both the high forest and savanna areas. The result has been serious reduction in timber resources. There is the fear that what is left of the forests and the wildlife may be completely lost within the next few years if care is not taken. Today we continue to find evidences of serious soil erosion in many parts of the country. On the other hand, the rate of afforestation continues to be far slower than the rate of exploitation.

The subsistence nature of our agriculture associated with shifting cultivation and bush burning contributes to the degradation of the environment. Overgrazing and indiscriminate use of pesticides and fertilizers also result in degradation of biodiversity in Nigeria. For instance, Ita (1993) identified 24 pesticides in use in the country. Bush burning has continued to cause serious damage to the flora and fauna of the country. This is especially severe in the savanna areas of the country where the bush is burnt during the dry season. Various edicts against bush burning in many states have not achieved any significant result. Uncontrolled hunting and poaching outside and within the reserves respectively have drastically reduced the number of wild animals in the country. The situation today is that many species of plants and animals are seriously threatened in the country.

Though both the Yankari game reserve and Kainji Lake National park have become important tourist centres, contribution of wildlife tourism to the country's GNP is not significant. For instance, Ayodele and Falade (1990) noted that in Nigeria, wildlife based tourism contributed 1.1% of export and 0.2% to GNP compared to 35.8% and 4.6% respectively for Kenya.

At present, almost 1,000 forest reserves in Nigeria exist on the International Union for Conservation of Nature (IUCN) World Data Base on Protected Areas. However, most of these reserves are seriously degraded with some not having any forest left (USAID/Nigeria 2008). Most protected areas lack adequate protection because illegal logging, encroachment by farmers and cattle herders, firewood gatherers and poaching still continue in most areas. For instance, widespread poaching and encroachment has been reported in the Kainji Lake National park, the Yankari Game Reserve and the Old Oyo National Park (Oseni 2007; USAID/Nigeria 2008; Meduna *et al.* 2009). Similarly, the Wildlife Conservation Society noted that there are over 600 illegal farms within the Afi Wildlife Sanctuary alone (WCS 2010). Although the ratio of protected areas to total surface area is increasing in the country, many species of plants and animals are now seriously threatened. For example,

Milicea exelsia, *Garcina manni*, *Erythrina senegalensis*, *Nigella sativa* and *Kigelia Africana* among other species of plants, are seriously endangered. Also, animal species like *Crocodylus niloticu*, *Loxodonta africana*, *Trichecus senegalensis* and *Giraffa camelopardalus* are endangered in Nigeria (Federal Government of Nigeria 2001).

The IUCN Red List of Globally Threatened species contains 148 animal and 146 plant species found in Nigeria. Included in the list are 3 animal species and 15 plant species classified to be critically endangered. For instance, the Nigerian Banana Frog (*Afraxalus nigeriensis*) and the Nigerian Stream Crab (*Sudanonautes nigeria*) are listed on the IUCN Red List of threatened species (IUCN 2010). A total of 171 plant species and 29 known species of mammals in the country are threatened (Table 1). Table (1) also shows that, of the 13 species of amphibians threatened in the country, 5 are found only in Nigeria.

Constraints against Conservation in Nigeria

The effectiveness and success of protection in any part of the world normally depends on many local factors of economic, social and political nature (Joppa *et al.* 2008). In Nigeria, various factors are obstructing the effective implementation of conservation policies. There is the problem of lack of adequate data on the status of biodiversity and the extent of degradation in the country (FAO 2000; USAID/Nigeria 2008). This has made it difficult to design adequate programmes for conservation in the country.

Another major factor contributing to environmental degradation in the country is the uncoordinated land use policy. Natural forests are being destroyed by other forms of land use, like agriculture, grazing and construction activities as a result of rapid urbanization leading to desertification and degradation of the environment (FAO 2000). There is evidence of land conversion to agriculture in some forest reserves without any serious effort by the authorities to stop the trend (USAID/Nigeria 2008).

Closely linked to the problem identified above, is a lack of well-defined programmes. Many of the programmes and activities aimed at achieving the objectives are not well designed or organised. For instance, the tree planting campaigns are not properly coordinated nationally. The situation is complicated by the problem of discontinuity in commitment to the policy. The rapid turnover of political leadership in the country has resulted in varying degrees of commitment to the implementation of programmes. In the case of the tree planting campaign, while it was mostly neglected by some regimes, others made half-hearted attempts at reviving or promoting it. Also programmes for reforestation of marginal lands are sometimes used as political strategies. Priorities are seldom given to areas where urgent actions are needed since they are often used to gain political advantage.

Another problem is that of inadequate funding of institutions, programmes and other activities concerned with biodiversity conservation in the country. There is also the problem of a dearth of manpower. The country lacks an adequate supply of well-trained foresters, forest biologists and other conservation experts capable of successfully managing the country's forest and wildlife resources. There is also a shortage of well-trained forest and game guards (WSC 2010). Protected areas therefore, lack adequate staff, training and equipment. This problem is especially severe in areas protected by state governments (USAID/Nigeria 2008). For example, Meduna *et al.* (2009) listed inadequate staffing, lack of equipment and poor remuneration of staff as some of the management problems experienced in the Kainji Lake National Park.

Cultural factors have also continued to militate against effective conservation policy implementation in the country. In many communities in Nigeria, land is seen as a sacred property passed from one generation to another. Great opposition normally follows attempts by government to convert what is regarded as personal or communal property to reserves. Today, many national parks and reserves still harbor enclave villages; for instance, the Cross River and Gashaka-Gumti National parks (USAID/Nigeria 2008). On the other hand, all protected areas in the country are bounded by communities who continue to encroach on these areas through farming and other activities. Many Fulani cattle herders also regularly move around freely with their animals in some of these reserves (USAID/Nigeria 2008).

Another important factor is the high poverty level in the country. Many laws on biodiversity and forestry are difficult to enforce because of the high level of poverty in the country (USAID/Nigeria 2008). A lot of people in both the rural and urban areas depend on firewood and charcoal for cooking. Thus, the local trade in firewood and charcoal continue to thrive. The problem is aggravated by increasing food and fuel prices which force more people to depend on forest resources for survival.

Corruption among political office holders and implementing officials is another serious problem. Funds meant for conservation and programmes such as desertification and erosion control are often diverted to other uses which are often personal. Since many programmes are eventually turned into avenues for fraudulent practices, very negligible achievements are often recorded. There have also been cases of reserve officials who connive with poachers to perpetuate illegal activities within the reserves. This problem has been aggravated by the poor working conditions of those working to implement or enforce policies. In its report on the state of Nigerian biodiversity, USAID/Nigeria (2008) reported that nine elephants were believed to have been poached between May, 2007 and January, 2008 within the Yankari game reserve. Meduna *et al.* (2009) identified poor remuneration for staff, inadequate staffing and lack

of equipment as some of the management problems in the Kainji Lake National Park.

POLICY RECOMMENDATIONS

There is therefore the need for more effective planning and implementation of the forest and wildlife conservation policy in the future. Strategies for promoting better environmental forestry and wildlife management in Nigeria include:

- First, improving the legal and political frameworks for conservation management in the country. There is the urgent need to direct efforts towards developing very sound policies for effective management of the country's biodiversity resources. Thus, emphasis must be on both zoological and habitat problems while also, developing better ways of harvesting and marketing forest products. Furthermore, policy makers and implementers need to look beyond mere capacity building, to building the right political will among the citizenry, to ensure the enforcement of conservation policies in Nigeria. This therefore calls for closer integration between the public and private sectors.
- Secondly, there is the need to expand research in areas of forest biology laying emphasis on productivity, decomposition and recycling to provide information for evaluating the potential yields of the forests (Olofinboba 1979). This will go a long way in providing the necessary data required for developing the appropriate conservation policies for the country. More emphasis should also be on research into forest economics with the aim of ensuring a more efficient use of forest resources. To ensure better dissemination of research findings to implementing officials, close association must be encouraged between researchers and forestry and wildlife managers.
- Thirdly, emphasis must be on the provision of basic education on forestry and wildlife for the general Nigerian public. Basic conservation education should be inculcated into the curriculum of primary and secondary education to ensure early information. This must be combined with the use of public enlightenment campaigns through the media and other means. This will ensure that the general populace acquire the necessary education about the importance of rational use and conservation of forest resources.
- Fourthly, greater efforts should be directed towards reforestation programmes especially in the marginal areas. This will protect land against erosion and desertification. Experience of countries like China, India and Senegal has shown that, it is possible to change marginal land into arable land through reforestation and planting of shelter belts. Afforestation and reforestation programmes must be well coordinated while the activities of all levels of government need to be closely integrated with that of the private sector. This will eliminate conflicts and

- confusion thus, increasing the possibility of success in programme implementation. This should be coordinated with positive efforts to develop alternative sources of energy for domestic uses, with the aim of reducing the rate of destruction of the natural vegetation. This is because there will be less dependence on firewood.
- Fifthly, government should put in place suitable economic incentives for local communities around protected areas to improve their wellbeing with the aim of reducing encroachment. Biological conservation of buffer zones will reduce the damaging effects of human activities on protected areas. Effective buffer zone management will allow the local inhabitants to raise their income without threatening the protected areas. Representatives of surrounding communities should be involved in buffer zone management to ensure effectiveness.
 - Finally, there is the urgent need for proper funding and staffing of protected areas in the country. Governments at all levels should view conservation as very important to achieving sustainable development in the country. The government must therefore, be prepared to provide reasonable financial support to conservation and other programmes like afforestation, reforestation, erosion control and land reclamation programmes. Efforts should also be directed at raising the working conditions of conservation workers through better remuneration and provision of proper equipment, to ensure effective management and enforcement of policies.

CONCLUSIONS

The Nigerian national policy on Forestry, Wildlife and protected Areas, is aimed at the protection and sustainable management of the flora and fauna of the country. While Nigeria is rich in biodiversity, the reckless destruction of its forests and wild animals, which necessitated state intervention to protect the environment, still continues today. Indiscriminate destruction of the flora and fauna of the country continues in virtually every part of Nigeria. Today, many species of Nigerian plants and animals are either threatened or endangered and at the same time, soil degradation, erosion and desert encroachment continue in various parts of the country. Problems, such as inadequate data on the status of biodiversity, uncoordinated land use policy, absence of well-defined programmes, inadequate funding and high poverty levels in the country remain the major constraints against the success of the policy.

Improving forestry and wildlife management in Nigeria must therefore begin with the development of a proper legal and political framework for conservation management. Other measures include providing basic education on conservation for the general population of Nigeria. There is also the need to address the issue of poverty by providing proper economic incentives to improve the well-being of people around protected areas. This should however, go on hand in hand with the provision of adequate funding and staffing of protected areas in the country.

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