

**NIGERIAN NATION, THE CHALLENGES OF ITS NATURAL ENVIRONMENT
AND THE IMPERATIVE OF A PROMPT ACTION ON THEM**

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ABSTRACT: *The paper underscores the enormity of the wealth of the natural environment of Nigeria. It also points out the equally massive human population which can boast of an enviable pool of human resources. It highlights the special importance of the natural environment over other environments. The paper however notes that this natural environment of Nigeria, is presently beset with diverse challenges of enormous proportion. These challenges are highlighted in the paper and the groups of researchers that can work on them suggested. The paper concludes with an admonition to all Nigerian people, on the imperative of fixing these challenges, as a first major step to seeing Nigeria through, on her bid to attain sustainable development in the 21st century.*

KEYWORDS: Natural Environment, Multifarious Challenges, Specialist Researchers, Sustainable Development

INTRODUCTION

No nation that is aspiring after sustainable development in the 21st century world, can afford to toil with her natural environment. So important is this environment that Adelegan (2009) cited a Nigerian reknowned economist-Pius Okigbo, as having deposed that for any nation to attain sustainable development in the 21st century – a century often described as a knowledge century, such a nation must have deployed appropriate knowledge to tap into and amass the wealth of her natural environment. The natural environment is important not just because it is a natural repository of wealth, it is an environment designed by God, to sustain life. It is of biological importance in providing what living organisms need for life in the forms of oxygen, water and energy. It also provides human beings with the basic necessities of life, in the forms of food, shelter and clothing. It is the repository of plant and animal biodiversity. It is also a repository of other natural resources, such as water and the biological resources of water, in the forms of fishes, lobsters, prawns and crabs and the numerous diverse species of edible algae. It is also a repository of the non-biological resources of water, such as common salt and iodine. Besides water and its resources are lands and soils, rocks, granites, stones and solid minerals, including mineral ores and mineral elements, gem stones and valuable metals. The natural environment also harbours the fossil fuels such as petroleum oil, natural gas and coal. It also has over it the atmosphere, which consists of biologically essential gases of oxygen and carbon dioxide, as well as nitrogen the natural diluent of air, as well as the inert gases.

Fatubarin (2009a), noted that these natural resources of the natural environment, are of economic benefits, in providing sources of food, sources of souvenir and sources of trade items. They also provide shelter as well as enhance development through making available for human use, lands, soils, water, air, petroleum oil as well as natural gas. They are also of educational benefits, as well as being of recreational, aesthetic, medicinal as well as spiritual and cultural value. They provide sources of energy, as well as make transportation, warfare and defence possible.

The natural environment is not only of great value on its own right, it is of immense impact on other environments that owe their existence to humankind. In fact, it not only facilitates human activities in these other environments, it to a great extent, makes possible their sustainability, if it is well managed. It is on this all-important issues of the management of this natural environment for sustainability that “**the shoe is pinching**” in our country Nigeria. Ours is a country that can be described as being blessed without measure. This is probably not an overstatement, if one ruminates over what has made Fatubarin (2009b), to justify his description of Nigeria, as “**Nature’s Field Laboratory of Environment.**” This is paraphrased below:

Nigeria is a vast country, with a total land boundary of 4,047 kilometres and a coastline of 853 kilometres. Its total area is 923,768 square kilometres (about 92.4 million hectares), with a land mass of 910768 square kilometres and with water occupying an area of 13,000 square kilometres. Its principal rivers include rivers Niger and Benue, which meet and combine in Lokoja – the confluence town, from where their water empties into the Atlantic Ocean in the coast, where it forms an oil-and-gas-rich delta, whose magnitude is not equalled in Africa. Besides these two rivers are Osun river, Ogun river, Gongola river, Shiroro river, among several others. Nigeria is also a proud owner of part of Lake Chad, located at the extreme north-eastern corner of Nigeria in Bornu state. Nigeria shares Lake Chad with Republic of Chad and Niger Republic.

The topography of Nigeria is particularly very fascinating, so also is the climate equable and favourable for diverse agricultural activities. The soils are inherently fertile and can sustain the production of diverse food and cash crops. The vegetation is alluring and is capable of sustaining diverse species of wildlife, livestock and farm animals. Natural resources abound in Nigeria and they include diverse plant and animal biodiversity, extensile arable land and fertile soils, petroleum, natural gas and coal. Other resources include hydropower and abundant solid minerals, with examples being iron ore, gold, tin, columbite, limestone, lead and zinc, among others.

If Nigeria can be rightly described as being blessed beyond measure in natural resources, it is in the human resources that this blessing is manifested in a greater dimension. Nigeria’s population which was well over 140 million in year 2006 (Fatubarin, 2009c), is now projected to be well over 150 million in year 2014. It is within this massive human population, that

renowned academicians and intellectuals, seasoned technocrats and administrators, skilled policemen, security personnel and armed forces, can be counted in a large numbers.

However, in spite of all these impressive records about Nigeria's natural environment and the equally impressive human resources that could manage it, all is far from being well with this God's endowed natural environment of Nigeria. The nation's natural environment, is grossly bedeviled by numerous challenges, so much so that the abundant wealth the natural resources should confer over the years on the country, is not seen in the quality of life in the country. The abundant wealth of the natural resources of the country, has not translated to sustainable development, over well over 50 years of the country's independence. This grim picture of the state of Nigeria's natural environment, is painted by no less a personality than Chief Philip Asiodu, who in 2013 at a public forum, noted that Nigeria had well over 30% of forest vegetation cover in 1960 – the year of the country's independence. This vegetation cover has now decreased to a meager 4% in 2013, within a period of a little over 50 years. What has happened to the forest vegetation cover of the country over the years, is probably reflective of the plight of a large number of other natural resources of the country, such as the lands, the soils and the wildlife, among others.

As if to further underscore the point made by Chief Philip Asiodu in his comments on the forest vegetation cover of the country, The PUNCH – a national daily in its Editorial of Wednesday, July 31, 2013, summarized the position of all patriots of Nigeria and all who are interested in the affairs of the country. The editorial captioned “**That disgraceful food import bill,**” revealed that Nigeria spends 11 billion dollars in importing food each year, with the bulk of the food materials, being those that can be grown locally, with enough for exports. Worse still, the editorial noted, is the fact that the monstrous import bill is rising by 11 percent annually. Well over 60% of Nigerians (60.9%) as the editorial noted, are living in abject poverty, with youth unemployment put at about 50% and 75% of the country's over 80 million youths underemployed. As a result of this ugly development, the food-producing potentials of our plant biodiversity in Nigeria, are not being realized.

It is at this point pertinent to probe deeper into the misfortune that has befallen Nigeria's natural environment over a little over 50 years of her independence, when Nigerian people secured the mandate to govern themselves and through such, supervise and manage the country's natural resources. This is what is done in the next section of this write-up. This probe into the past on Nigeria's natural environment, is being done in total compliance with an aspect of our people's way of life in Yorubaland. Our people believe that when a young person stumbles and falls, that young person, usually looks forward. Whereas when an elderly person stumbles and falls, he or she usually looks backwards.

In Yoruba language, this is in this form:

“Bi omode ba subu, a wo iwaju,

Bi agba ba subu, a wo ehin wo.”

The question may be asked, why does the elderly person look backward? It is simply to let such a person assess the cause of the stumbling and falling. This is possibly to make such a person guard against such in future. It has therefore become pertinent for our country to have a peep into the past, in order to carefully assess the state of things as regards the country's natural environment. Following such detailed assessment, plans could then be put in place, to chart a new course for putting the country on the path of sustainable development, which is a legitimate aspiration of any country, in the 21st century world.

However, before taking a look at the diverse challenges of the natural environment of the country, it is important that the special importance of this environment is further underscored, as done in the section of this paper below.

The special importance of the natural environment over other environments

The natural environment is of special significance, in the sense that besides providing the biological needs of all living things in diverse environments, thereby helping to sustain life in these environments, this environment also helps in sustaining other environments in diverse ways. These other environments are listed by Fatubarin (2013), to include the socio-economic environment, the built environment, the political/governmental environment and the spiritual environment.

The natural environment helps to sustain the socio-economic environment through the following:

- i. Providing the soil in which most plants are anchored and from which they derive the bulk of their material needs, thereby fostering the agricultural, forestry and horticultural activities of man, that are anchored majorly on plants.
- ii. Providing the water, which has a large number of uses for human beings in such things as domestic uses, industrial uses, commercial uses, scientific uses and agricultural uses, among several others.
- iii. Providing lands, soils, rocks, mineral ores and other forms of solid minerals, as components of the abiotic environment and as parts of the natural resources around which several agricultural, commercial, industrial and scientific activities of human beings revolve.
- iv. The plants, animals and microbes, which constitute the biota of the natural environment, are not only important as natural resources of the natural environment, but also provide a large number of benefits to human beings as the biodiversity of the natural environment.

Similarly, the natural environment helps to sustain the built environment by:

- i. Providing the material requirements for putting up the structure of buildings, in such things as rock aggregates, soil materials and water.
- ii. Other material needs of buildings in form of planks, asbestos and similar materials, are also got from the natural environment.

- iii. Structural materials such as iron rods, nails and other metallic materials used in different aspects of building construction, are usually got from the mineral ores present as part of the topography of natural environments.
- iv. Similarly, the plant materials come in handy in living forms as ornamentals, used in landscaping the buildings of the built environment and those used in creating green belts and zones within the built environment. They therefore constitute handy materials in mitigating the effect of climate change in the built environment.

The natural environment benefits the political/government environment by providing the bulk of the funds that are appropriated on an annual basis, for running different services of governments, at all levels in a country like Nigeria. The natural environment also benefits the spiritual environment by many of its components, such as oxygen, solar energy, water and plants which combine to make living possible for human beings. This is through their sustaining respiration, feeding, housing, clothing and energy needs of human beings. The importance of this is that, only the living can have interactions with the spiritual realm, that operates in the spiritual environment.

No wonder then that as earlier noted, Adelegan (2009), cited Pius Okigbo, a reknowned Nigerian Economist, as having posited that, for any nation to attain meaningful development in the 21st century, such a nation must be ready to deploy effectively, appropriate knowledge – a major tool of relevance in the 21st century – the knowledge century, to explore the potentials of her natural environment.

The multifarious challenges of the natural environment of Nigeria

The natural environment of Nigeria, is over the years, bedeviled with myriads of challenges of abuse, misuse, neglect and other and challenges imposed on this natural environment, by the challenges of the man-made environment. These challenges are for convenience, grouped into 10 categories listed below, together with the numerous examples of the challenges in each category:

- I. Environmental degradation**
 - i. Degradation of valuable lands
 - ii. Loss of valuable soils
 - iii. Dumping of chemical wastes within the environment
 - iv. Wasteful mining of solid minerals
 - v. Burning and abuse of fire
 - vi. Deforestation of natural vegetation
 - vii. Oil spillage in oil-producing places
 - viii. Soil compaction
- II. Loss of biodiversity**
 - i. Loss of plant biodiversity

- ii. Loss of animal biodiversity

III. Natural enemies within the environment

- i. Pathogens
- ii. Parasites
- iii. Animal pests
- iv. Weeds
- v. Invasives

IV. Environmental pollution

- i. Air, Water, Land and Soil pollution
- ii. Oil spillage
- iii. Gas flaring
- iv. Noise and radiation pollution

V. Environment sanitation and hygiene

- i. Sanitation of the environment in our communities
- ii. Sanitation of our foods during sale

VI. Wastes, their generation and disposal

This is a major challenges that has to do with the production of diverse wastes, such as sewage, garbage and refuse, from diverse places such as from domestic, commercial, industrial, agricultural, among other sources and their proper disposal. There is also the challenge of effective disposal of specialized wastes such as hospital wastes, electronic wastes and others such as hazardous wastes and weapons of war.

VII. Climate change and its attendant consequences in our natural environments

So important is the challenge of climate change phenomenon, that it has been recognized across the continents of the globe, as “**the greatest challenge that has ever faced humankind, collectively**” (Foley, 1991). In the natural environment of Nigeria, the climate change phenomenon has been implicated in such things as are listed by Fatubarin (2009d), to include the following issues on which a large volume of information has become available: health of human beings (Olaniyan 2009); human populations (Adeyewa, 2009); food security (Dokun Oyeshola and Lawal, 2009 and Oseni et. al. 2009); agricultural development (Dada, 2009; Matanmi, 2009; Awotoye, Matthew & Makinde, 2009). Others include land management (Adeyewa, 2009); soil conservation (Fatubarin 2009d), energy development (Adeyewa, 2009); and biodiversity conservation (Fatubarin, 2009d). There are a number of others. Prominent among these are coastal and marine environment management (Adeyewa, 2009 and Anuforum, 2009); urbanization and industrialization (Ilevbare and Adesanya, 2009 and Adeyewa, 2009); transportation and communication (Fatubarin, 2009d); drought and desertification (Fatubarin, 2009d); floods and erosion (Fatubarin, 2009d).

VIII. Challenge of effective management of the natural environment based on sound conservation principles, which Fatubarin (2009a) noted, involve the following:

- (i) Investigating the natural resources
- (ii) Protecting the natural resources
- (iii) Repairing the natural resources
- (iv) Maximizing the use of the natural resources
- (v) Upgrading the natural resources

IX. Challenge of adequate human resources development for effective management of the natural environment

There is glaring need of specialized man power in such areas of management of natural resources as oil and gas, renewable energy sources, solid minerals, among others.

X. Natural disasters

- i. Floods
- ii. Erosions
- iii. Drought
- iv. Desertification

XI. Challenge of appropriate laws on the environment and non enforcement of the laws

It must be noted that Nigeria is actually not lacking in the environmental laws, which include the international laws, the Federal laws, the State laws and the local government laws on environment. The trouble with Nigeria on the issue of environmental laws, which has now become a major challenge enforcement of these laws. Examples of the glaring lapses in the enforcement of these environmental laws, are seen in those of deforestation, poaching of wild life species in reserves, burning and abuse of fire, among others.

XII. Challenge of environment – related diseases

- i. Water – borne diseases, such as cholera, typhoid
- ii. Soil – borne diseases, such as jigger, cholera
- iii. Air – borne diseases, such as cold, flue, cattharr

XIII. Challenge of Zoonosis

These are diseases whose vectors (i.e. agents that transmit them), are animals. Their examples include malaria, lassa fever, rabies, among several others.

XIV. Challenge of Human population pressure

Pressure on natural resources utilization, as a result of the ever-increasing human population of the country. There is also the pressure of competing demands on such resources as the lands of the country, which are fixed resources (Yisa, 1988).

XV. Challenge of Environmental beautification

This has to do with many the environment of living places and that of the surrounding, including the roads, the hills, the mountain ranges, the springs, the water falls, the caves and all places of attraction, that can be constituted into resort centres beautified and made attractive to people all the year round.

XVI. Challenge of Agricultural practices

This involves practices of rural or peasant farmers in such things as shifting cultivation, fallowing, slash-and-burn farming, use of “primitive” tools, such as hoes and cutlasses. It also covers such challenges as those of commercial agriculture, which involves irrigation, use of huge equipment, use of agro-chemicals and irrigation.

XVII. Challenge of Food Security

This has to do with spreading the availability of food in abundance and right quality, all over the year round and the issue of making the foods available at affordable prices and as near as possible, to the people.

XVIII. Challenge of transhumance

This is a challenge of how to put a stop to the migration of herdsmen and their livestock, from outside the country into the country and from the northern parts of the country towards the southern part, in search of pasture, all through the year. Along with this, is the issues if providing alternatives for livestock, in place of the pasture and brose plants, they depend on for food. Such plants according to Anuforum (2009), are responsible for massive emission of methane from the mouth of these ruminants, when they are chewing these plant foods. Methane, it must be noted, is known to be 23 times more potent than carbon dioxide, as a green house gas (Anuforum, 2009).

XIX. Challenge of Effective Management of natural environmental scenery

Nigeria is indeed much blessed with a large number of natural environmental scenery, which are in dire need of effective management. Examples of such scenery are springs, such as Ikogosi warm spring of Ekiti State, Erin Ijesa water fall in Osun State, exciting mountain formations and hills, caves and age-long wells in Yankari Game Reserve in Bauchi State, suspended lake of Ado Awaye in Oyo State, among several others.

XX. Challenge of Exploration of the Renewable Energy resources of Nigeria

Abundant renewable energy resources in forms of wind and solar energy, among others, are available in Nigeria, for the nation to tap into and explore, to solve the perennial energy crisis of the country.

XXI. Heavy Metal Pollution

This is a challenge that is emerging in certain parts of the country, where heavy metals such as lead and cadmium have been implicated. It is a challenge worth giving priority attention to, in issues involving water and soil pollution in the country. This is also true of the challenge of hazardous substances in the environment.

XXII. The Lake Nyos Issue

Though Lake Nyos is in the Cameroon, it is in a location very close to a number of States in Nigeria, notable among these States are Cross River, Adamawa, Benue and Taraba, among others. Okpo Ojah (2012), wrote in The PUNCH of Thursday, 29th November, 2012, on the title “**Guiding against possible collapse of Lake Nyos.**” In that article, he noted that a couple of years ago, carbon dioxide was produced in large amounts from this lake, which caused a lot of havoc to human population and livestock and farm animals, in many States in the northern part of Nigeria. He noted that the National Emergency Management Agency has been predicted that this lake may collapse in the next 10 years or so. How ready is Nigeria for this challenge people of Nigeria and their stocks of livestock and farm animals?

XXIII. The Lake Chad Issue

The Lake Chad Issue has to do with the impact of climate change and its consequences of human migration along with transhumance. It has social as well as economic implications. How is Nigeria rising up to the challenge of Lake Chad issue?

XXIV. Environment – related Non-Governmental Organizations (NGOs)

The importance of Non-Governmental Organizations of nay type in a developing nation, can not be over-emphasized. This is particularly so with those of them that are concerned with the management of the natural environment. The few that are operating in Nigeria, have been very effective, but their number in relation to the size of the country and its population, is relatively few and far between. There is therefore the challenge of putting more environment-related NGOs in place. There is also the need to broaden their scope of operation, to encompass diverse issues of environment in Nigeria.

XXV. Environmental Education

There is the challenge of educating Nigerian people on the all-important issue of environmental education. Such education will enhance the value of environmental ethics in the people. It will create environmental awareness in them and inculcate in them, the virtue of environmental consciousness. All these will go a long way in bettering the lot of the natural environment in the country.

The possible list of specialist researchers on the challenges of the natural environment

The natural environment, is the repository of diverse natural resources which play very important role in the life of diverse communities that make up a nation. It is therefore not surprising, that the environment has attracted diverse groups of academicians, researchers and intellectuals who ply their trade within this unique environment. Notable among these interest groups in issues concerning the natural environment, are the following:

- i. **Ecologists**, who are concerned with the study of living things in the diverse natural environments. These ecologists are expectedly named after their areas of specialization in ecology. We this have plant ecologists, among several others.
- ii. **Environmentalists**, who are diverse groups of specialist academicians researchers, intellectuals, technocrats and environmental enthusiasts, who float diverse non governmental organizations (NGOs), that carry out their activities in the natural environments. The diverse environmental specialists include agriculturists, foresters, wildlife managers, hydrobiologists, and plant and animal scientists. Others include sanitation and waste management experts, pollution monitoring and control experts and environmental management experts, and pest control experts, among others.
- iii. **Climatologists**, who are scientists that specialize in the study of climate, the climate factors and their variability and change over the years.
- iv. **Soil Scientists**, who are scientists that specialize in the study of soils, their types and their capability and dynamics over a period of years.
- v. **Geologists**, who are scientists who specialize in the study of rock and the minerals, got from them.

Making up these specialists, are academicians, researchers and intellectuals, whose professions can be listed among those groups listed above. However, besides these groups of specialists, are the specialist researchers in the nation's diverse research institutes and specialist technocrats in diverse specialized agencies of federal government in the environment. Examples of these are those of forest research, horticultural research, cocoa research, oil palm research, among others. There also the specialist environmentalists within the state and federal ministries of environment. Besides these, are also the specialist taxonomists, whose duties relate to naming, classification and ordering different organisms into diverse taxonomic groups. There is no doubt about the fact that if all these specialist researchers that are relevant to the natural environment of Nigeria, appreciate these challenges and their enormity and are determined to team up with people of like-minds, to frontally confront these challenges, the end to them will come sooner than later.

CONCLUDING REMARKS

Sustainable development of the natural environment of Nigeria, can not be assured, with the magnitude of challenges currently facing the country. It has therefore become an imperative,

that these challenges are fixed, before the country can embark on building on a solid foundation such fixing of these challenges of the natural environment, would have laid for further development. There is no doubting the capacity of the natural environment to contribute to meaningful development in the nation, even in spite of these challenges. But only the fixing of these challenges, will accelerate and boost such development and do the image of the country proud. It will also enhance the image of academicians and researchers that ply their trade in the natural environment of the country. This is where all ecologists, environmentalists and other environmental scientists, come in. It is also where the issue of appropriate leadership, imbued with appropriate environmental values and ethics and strong political will to build a sustainable environment for development, comes in. This is also where an-all-hands-on-deck approach, becomes an imperative to achieving our collective objective of managing the natural environment of this country, to guarantee for the country sustainable development.

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