The Effect of Unplanned Exploitation of Environmental Resources: The Nigeria’s Experience

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Abstract Environmental sustainability requires constant and regular observation of on-going activities within the environment, and maintaining it through an enhanced environmental standard, using existing laws. The study observed that the development of agriculture and modern technology has led to an increasing human impact on environmental resources, without adequate correlation towards the after effect on future generation in Nigeria. Unplanned exploitation of environmental resources has caused a lot of havoc to man and his environment in one hand and cost government huge income on the other hand. It had been observe that weak legislations and lack of political will has among other things place Nigeria as the highest flare of gas. Air pollution, dumping of waste, pollution of water etc. are some of the result of an unplanned exploitation of environmental resources. Unplanned exploitation of resources is anti-society, hence the need to honour all international treaties on environment. The government and her agencies, should beyond the immediate gains, focus more on the interest of the nation and unborn generation based on sustainable development, which is planned exploitation of exploitable environmental resources. The nation, it was observed is seating on keg of gunpowder if resources exploitation is not checked and very fast. The indiscriminate dredging of sand in all nook and crannies of fragile south –south will cause a great catastrophe such as landslide or submergence of communities. The risk of cancer and heart diseases will continue to increase until appropriate legislation on resources exploitation is put in place.

Keywords: environmental, exploitation, resources, unplanned, Nigeria


1. Introduction

The biblical injunction and blessings recorded [1] give human responsibility and authority as the caretaker of his environment and the resources therein. However, human has chosen the part of subduing as in subduing an enemy. This was not notice initially because of lack of knowledge at that time in one hand and the abundance of resources at that time in the other hand.

Humans have a greater impact on the biosphere than any other species. Humans affect natural ecosystems by disrupting flows of energy and nutrients. Deliberate impacts in one ecosystem may have unanticipated results in neighbouring systems (Bradshaw and Weaver) [2]. It was just recent that living and non-living things actually responded to changes in the abiotic environment affected by human activities, on realization that human activities have led to an increasing human impact on the environmental resources without adequate correlation toward the after effect especially for our future generation. The aforementioned challenge required urgent attention leading to formation of various schools of thoughts on environmental issues.

Environment is the combination of the atmosphere, hydrosphere, cryosphere, lithosphere, and biosphere in which humans, other living species, and non-animate phenomena exist. As an analogy, the environment is the habitat or home on which humans and others depend on for survival (Dearden and Mitchell) [3]. To be precise environment is the sum total of conditions in which an organism lives (Bradshaw and Weaver), [4].

Mayhew [5] defined resources as some component, which fulfils people’s needs. Resources may be man-made - labour, skills, finance, capital, and technology – or natural-ores, water, soil, natural vegetation, or even climate. Resources were more specific and are normally thought of as such things as forest, wildlife, oceans, rivers and lakes, minerals and man.

Planning – Resources in a given environment have to be mobilized for successful planning, because of its economic value such as industrial raw materials, power generation, (electricity) tourism, domestics’ uses and educational purposes to mention but a few. Nevertheless, planning as “a technique is a means to an end, the end being the realization of certain pre-determined and well defined aim (Ogudia) [6], thus, the observation by Mayhew [7] affirming that “planning presupposes an
ability to foresee future event and a capability for analysing situation and solving problems”.

Environmental resource planning is therefore the detailed arrangement for the sustenance, utilization, and preservation of the natural resource for future purpose. Exploitation simply means the removal of an environmental resource from its natural position or place. Resources can be exploited in one of these four ways.

1. Unknowingly, that is when the resource has not been recognized as valuable to man. For instance, people can use diamond for stoning where and when it was not recognize as a resource, as it was the case before the realisation of its value.

2. Legally, that is when the miners have the mining License. Companies and government agents or individual can acquired such and legally involve in mining business.

3. Illegal, that is when resources theft and Money bags that bribed government agents and community to remove resources without paying the legal royalty to government.

4. Those that neglects international standards on mining. These could be 2 or 3 above.

2. Environmental Issues and Convections

The over exploitation of environmental resources and their degradation is a global and topical issue that has generated interest among Governmental Agencies and Non-Governmental Organization (NGOS). Concerning over exploitation of natural resources, global warming, pollution, deforestation, flooding, soil erosion, desertification, drought and stock piling of armament, these are wider environmental issues that has paramount implication on natural resources and human existence in the environment.

It is not surprising that the increasing awareness of environmental problems, led to the United Nation Conference on Human Environment in Stockholm [8] where the action on plan for the human environment was adopted though it was to alert people, create awareness about deterioration of the environment and proffer solution that will reduce further degradation of the environment. One product of the conference was the concept of sustainable development as a direct human activity so as not to endanger the future and ability of our generations in meeting the future need in the environment.

The conference also initiated the United Nations Environmental Programme (UNEP) in 1992 that led to the United Nation (UN) Conference on environment and development held in Rio-de-Janeiro, Brazil. This time it was to create awareness and set out principle on environmental sustainability. The conference was to set agenda for sustainable development into the 21st century.

Environmental Impact Assessment (EIA) seeks to consider the probable consequence of human intervention on the environment. The United Nation, National Environmental policy requires such assessment to be drawn up for all major projects by the federal development, hint on likely environmental effect, both positive and negative, and outline possible alternatives and an estimate of an irreversible commitment of scrap resources.

The Multilateral Environmental Agreements (MEAs) these are agreement between countries, applied internationally or regionally and is concerned on a variety of environmental questions including the atmosphere, living matters, marine life, desertification, ecosystem protection refusal of dumping of dangerous substances and marine contamination.

There are over 500 Multilateral Environmental Agreements (MEAs) including 45 global geographic scopes with at least 72 signatory countries as affirmed by Wikipedia [9]. Worthy of note is the fact that the MEAs represent International Environmental Law and the governance structure consist of following chain of phases.

- Assessment of environmental status
- International policy development
- Formulation of MEAs
- Policy implementation
- Policy Assessment
- Enforcement
- Sustainable development

Note: Nigeria is member of most of the MEAs.

The main conventions include:

1. Convention on Biodiversity (CBD) 1992 – 1993 – aims to conserve biodiversity or to protect genetic resources, ecosystem, and species, to use biological diversity in a sustainable fashion, to share the benefits of biological diversity fairly or equitably, through proper access to genetic resources and the transfer of appropriate technology and funding, the agreement linked to the convention include the Cartagena – protocol on bio safety.

2. United Nation Framework Convention on Climate Change (UNFCC) 1992 – 1994 – aims to stabilize concentrations of Green House Gases (GHGS) in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, and reach a level within a time scale that allows ecosystem to adapt naturally to climate change without threatening food production and enabling the pursuit of sustainable economic development. It also incorporates the Kyoto protocol.

3. United Nation Convention to Combat Desertification (UNCD) 1994 – 1996, which aims to combat desertification and mitigate the effect of drought and desertification in countries seriously affected by these problems particularly in Africa.

Other conventions include:

3. Types of Resources

(A) Atmospheric Resources: Are useful materials from the atmosphere that benefit man and enhance his life and his environment. Atmospheric resources include several layers of wind, rain, gases, cloud and solar energy. Equally vital to man is heat which control many chemical, physical and biological process on earth.

Aloni and Umenwa [10] observed, “Advancement in science and technology has allowed man to make effective use of atmospheric resources through the conversion of solar and wind energy for man’s domestic and industrial uses”. The wind has been put into many uses in various parts of the globe many years ago, some of such uses are for the purpose of lifting water from underground to the surface, to modification of weather and climate, drying of agricultural products, aviation industries , and pollination of plants. Other economic values of atmospheric resources to man is rainfall, which aid plants and animals growth, it is also source of water for rivers, lakes, underground water and ocean.

The atmosphere also reduces the rate of ultra violet rays and increases the sources of power generation, it enables satellites to maintain its position in the space, as well as contribute towards the provision of vitamin D. An important fact to note is that atmosphere is a medium for transport, and the only exit route from the earth.

(B) Vegetation Resources: These are vital things derived from the forest and savannah community which are of immense value to man, this includes plants and animals flora and fauna and soil, their values can be enhanced in form of game reserve, fruits, firewood, latex, fibres, pulps to mention but a few, therefore enhancing tourism potentials.

(C) Water Resources: These are essential things derived from water bodies or on its shores. Within the environment, the sources of water include well, spring, stream, river, lake, sea, ocean underground water and ice cap. Some economic values accruable from water resource are hydroelectric power generation (HEP), mineral deposit, water organism, e.g. (fishes) and other sea animal, as well as water tourist centres.

Water bodies extend domestic and industrial economic values to man such as transportation, cooling, washing, and processing functions. Others include cooking, drinking, regulation and modification of weather and climate as well as enhancement of seed germination and formation of new land by sedimentation process. Ocean current is responsible for warming and cooling the globe depending on the current washing the area.

Mineral Resources: These are natural endowments, which found in rocks within the earth surface. They are unique resources because they are non-renewable. They are natural, chemical substances, which make up rocks of the earth’s crust and they have certain physical and chemical properties that differentiate one from another. There are 50 known mineral resources scattered unevenly throughout Nigeria, existing in form of metallic ore (iron ore, copper, and tin); liquid (mercury); fertilizer (potash phosphates), organically formed deposit (coal, crude oil) Olusegun et et [11]; [Gabriel et al [12]. Some minerals such as, crude oil are found in the southern part of Nigeria. Coals are found in the southeast, gold in north-west and tin in the middle belt just to mention a few.

Nigeria is a member of international committee of states and signatory to most of the environmental treaties and laws, created enabling environment to actualization of the treaties and protocols. Toward achieving this, Nigeria created Ministries, Agencies, Laws and regulations on environmental issues coordinated by the Federal Environmental Protection Agency (FEPA) and the ministry of environment.

The environmental issues, laws and regulations in Nigeria can be classified as concepts in legal cum political ecology or environmental policy related to defining the elements needed to achieving sustainability. All human activities, political, social and economic should be understood and manage as a subset within the environment and the ecosystem.

The basis of environmental policies in Nigeria is contained in section 20 of the 1999 constitution of the Federal Republic of Nigeria as (amended) which slates that “the state shall protect and improve the environment and safeguard the water, air, land, forest and wildlife of Nigeria”.

The legislature is the law-making arm of the government charged in section 4 of the constitution of Federal Republic of Nigeria, 1999, to make law for the peace, order and good governance of the country.

The roles of the legislature therefore are to provide appropriate legal framework for all environmental policies and tools for the good governance of the environmental resources. The Federal Ministry of Environment (FME) administers and enforces environmental laws in Nigeria, the functions it took over in 1999 from the Federal
Environmental Protection Agency (FEPA), created under FEPA Act of 1988.

The Federal Ministry of Environment has published several guidelines for the administration of the FEPA, and EIA Acts and procedures for evaluating Environmental Impact Assessment (EIA) report. Some of the critical environmental laws and regulations of the Federal Government or Agencies of the Federal Government enacted by the legislature are as follows:

Federal Environmental Protection Agency Act: This Act, retained as CAPF 10 laws of the Federation of Nigeria (LFN) 2004. Consequently upon the Koko toxic waste episode in 1988, the then Military Government of Nigeria promulgated the harmful Waste Decree 42 of 1988, which facilitated the establishment of the Federal Environmental Protection Agency (FEPA) through Decree 58 and 59 of 1988 (Amended in 1992).

FEPA, charged with the overall responsibility of Environmental Management and Protection. However, FEPA and other relevant departments in other Federal Ministries merged to form Federal Ministry of Environment in 1999, but without appropriate enabling laws to enforce compliance over the degradation and over exploitation of environmental resources. In 2007, the FEPA Act, was repealed and was replaced with National Environmental Standard and Regulation Enforcement Agency (NESREA) Act of 2007. It was charge with the responsibility of enforcing environmental laws, regulations and standards in detering people, industries, and organizations from pollution and degrading the Environment.

The laws and regulations of NESREA called NESREA 11 Regulation [11]


The above regulations were adopted. To ensure adherence to environmental sustainability the Federal Government of Nigeria directed all the States in the federation to also establish Ministry of Environment and State Environmental Protection Agency.

Environmental Impact Assessment Act

The Act retained as CAP B12 (LFN) 2004 (set out the general principles, procedures and methods of environmental impact Assessment in various sectors). The section 2 of the environmental Impact Assessment Act of 1992 (EIA Act) provides that the public or private sectors of the economy shall not undertake or embark on or authorize projects or activities without prior consideration of the effect on the environment.

Harmful Waste Act: This Act retained as CAP H1 LFN, 2004 (prohibits the carrying, depositing and dumping of harmful waste on lands and territorial water of Nigeria).

The Park Service Act: This retained as CAP N65 LFN 2004 (Conservation and protection of natural resources (wildlife and plant) in national parks).

Endangered species Act (Control of Internationals trade and traffic): This Act retained as CAPE 9 LFN 2004 (Conservation of Wildlife and Protection of threatened and endangered species).

Associated Gas Re-Injected Act, this is retained as CAP A28 LFN 2004. This Act needs little explanation on the enforcement of enabling law, because more gases are flare than previously. In fact, Nigeria flares more gas than any other country in the world. Nigeria flares about 2.5 bcf/d (Cigdaz.org) [13]

The National Oil Spill Detection and Response Agency (NOSDRA), Act 2007. The National Oil Spill Contingency plan itself is mandatory for all parties of the international convention and Oil Pollution Preparedness and Response cooperation (OPRC 90) to which Nigeria is a signatory.

Nigeria like many other countries has done and laid very good foundation on how to tackle environmental problem and to sustain the available resources for the future generation. However, paper work and laws are not enough to combat and change people way of life.

The Effect of Unplanned Exploitation of Resources

Man’s effort to travel to space and stamping his footprint on the moon via manned and unmanned satellite, the construction of International space station are all huge success. These developmental strides have influenced the information and communication sectors. This enhances easy dissemination of idea, information and security data. However, in stock piling our outer atmosphere with foreign bodies of different thermal capacity, new microclimate is form within the immediate environment around the foreign bodies; these affect atmospheric resources. It is on record that every trip to and from space triggers unprecedented rainfall (Terence) [14]. Sometimes failed satellite and spacecraft fall back to earth, resulting to disposal problem and health issues. For instance, in February 2008 the US Aegis Warship USS lake Eric was order to shoot down a large strayed satellite. A modified tactical standard Missile – 3 was launch and subsequently destroyed the satellite while it was in orbit. It was later discover that this rocket and the incoming remains of the satellite had an effect on the UK’s weather. It towered the air temperature by 2°C and three days after the launch and satellite had an effect on the UK's weather. It towered the air temperature by 2°C and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after the launch and three days after

Water bodies give domestic and industrial economic values to human, such as transportation, cooling, washing, solvent, processing; other functions include, cooking, drinking, sport, regulation and modification of weather and climate as well as enhancement of seed germination
and formation of new land. Despite the importance of water and its resources, the indiscriminate dumping of chemicals, physical and toxic waste into it has threatened not just the water, but the resources therein and human dependent [Alexander, [16]].

Water pollution is causing millions of preventable deaths every year. One third of population of the world is living under moderate or severe water stress and has no access to adequate sanitation. Therefore growing population, high standard of living and urbanization are increasing water demands. Water being a social food and not economic one, lot of water is wasted, particularly in irrigation (Jain and Rao) [17] thus inadequate sanitation is major concern for human health, hence the need for water to be managed more holistically; knowing too well that poor land use is responsible for flash floods, and pollution of coastal marine ecosystem. There is need to adopt water-conserving techniques, particularly in agricultural irrigation, especially in the whole of Northern Nigeria where water for irrigation is in short supply, and Nigeria nation largely depends on that region for the provision of the required agricultural wares.

Minerals are an integral part of modern economic lift. It is vital to remember that mere existence of certain mineral deposits does not guarantee economic activity; there are other factors also which exercise influence over their exploitation. Some of the basic mineral resources useful for man are coal, iron ore, mica, crude oil etc. iron is used in the manufacturing of steel which is the backbone of industrial complex (Jain and Rao) [18].

Mineral fuels like coal and petroleum domiciled in the southeast and southern parts of Nigeria respectively are very important in the field of transport.

The extent to which man is able to exploit mineral resources is determined by the development of science and technology, however the exploitation with the present level of science possess many challenges, which calls for structural planning.

Vegetation Resources and Wildlife: These are vital for human existence; however, the type of agricultural practice and the technology applied could be inimical to both human and his environment. The practice of cutting and burning exposes the soil to direct sun and rainfall, which can lead to lose of soil fertility and soil erosion.

Over grazing in the other hand can also accentuate soil degradation and desertification thus that, the result of all this environmental hazards is famine, hunger, migration and underdevelopment triggered by increasing population that Nigeria is experiencing presently.


Environmental resources abound in Nigeria, in fact over 50 mineral resources are found in Nigeria in over 500 locations. Vegetation resources occurs in three major categories – forest, Savannah (Grassland) and montane. Water Resources is also a blessing to Nigeria with network criss-crossing all around Nigeria, some with various resources. Like every other country, atmospheric resources are also present in Nigeria.

How these resources are exploited and used is the concern of this paper. It is disheartening that Nigeria that presented a position paper in 1972 environmental conference in Stockholm (Sweden) “four decades after is still having one of the worst environmental degradation channelling it to the drive for resources exploitation (Hyginus) [19]. This paper is concerned in those areas that are not well known to many but are like keg of gunpowder that must explode, unless addressed.

Some of the environmental resources prone to haphazard exploitation in Nigeria are shown in Figure 1 below.

![Figure 1. Map showing Some Exploitable Minerals in Nigeria](image_url)
major walkways, near markets, and even residential areas has caused untold hardship and sickness to the populace.

Worst still, is the presence of what is known in Nigeria as scavengers, which walk around refuse dump sites looking for scraps. These scraps sometimes were refurbished and sold to unsuspecting individuals; these will buy death as goods; whereas the environmental laws and regulations prohibit such activities. In States like Rivers, where refuse are collected. It has turns to eye saw as major streets, roads, junctions and school are now stinking.

A practise that cannot be proving scientifically, but works is act of rainmaking. Rainmakers induced rainfall are mostly torrential, the run offs are soil damaging (soil erosion). The effects of this unplanned use of the environmental resources are most often devastating.

2. Vegetation Resources: This resource is a very important contributor to Nigeria economy and beauty of the nation; a resource supports the greatest amount or number of the population in Nigeria.

This resource has suffered terribly in Nigeria because of poor planning or absolutely non - planning of its resources. In 21st century slash and burning is still taking place as a system of farming in Nigeria, and this has contributed to the destruction of plant biomass, animal population has gone into extinct and soil been destroyed.

Indiscriminate cutting down of the trees – lumbering, poaching, and bush fire has reduced both the plants population as well as that of animals this is prevalent in the southern and southwest region of Nigeria.

Presently, animals like Elephants and Lions population has reduced significantly. Worst is the fact that the forest has turned to haven for greedy businesspersons to dump waste products including toxics. The Koko Saga is one of such example.

Nigeria has lost the battle on reforestation, because illegal lumbers and their cohort have no business planting trees. What more, the nation loss billion of Naira in a way of evaded tax and royalty due to the Nation from this sector.

Agriculture is vital for human existence; however, the types of agricultural practice, and technology applied could be inimical to both human and environment. The practice of cutting and burning destroys animals and their habitat, exposes the soil to direct sun and rainfall and this has caused loss of soil fertility and soil erosion. Over grazing in the other hand has caused untold soil degradation and desertification. The result of this environmental hazard is famine, hunger and migration; Truth that is seen in Nigeria and other developing economy.

Water Resources: Nigeria is blessed with many Rivers, Streams, Lakes and Creeks. Salt, fishes, shell foods, these are some of the good derived from the water; offshore drilling and sand dredging are also vital product from the Rivers and old sea beds.

Waste products are channel and dumped into the sea or rivers. In some areas, the rivers are the community waste bin. However, these waters are use also for drinking and bathing. Fish gotten from some of these rivers may not be suitable for eating but who cares, as it is case at Onne River, in Rivers State, where the Petrochemical industry is located. Its waste is emptied into the River. Most probably, this has increased the incidence of cancer and heart attack in Nigeria of recent and in Rivers State in particular.

The extractions of sand from the riverbeds have led to the migration of sea creatures to areas with cleaner and clearer water. These has made river waters unsafe for drinking; Besides, the offshore drilling of crude oil has led to water pollution, which has kill sea creatures, and engender life of river users because of excessive pollution from oil spillages experienced in the crude oil producing areas. Note most of these rivers are the source of drinkable water for the river dependent villagers, polluting of these rivers will cause the people great harm. Noticing this deliberate wickedness on their lives moves some to join the so-called militancy common in the south- south of Nigeria.

Mineral Resources: these are natural endowments, found in the rocks within the earth surface. Nigeria is blessed with over 50 different kind of minerals distributed in 500 different locations. The manners in which the minerals were exploited are a major problem in Nigeria. It is the exploitation of these resources that is unplanned; and it is the major sources of pollution and problems in Nigeria. A senator of Federal Republic of Nigeria, George [20] observed, “Nigeria must seek to look further for ways of harnessing its mineral resources for sustainable growth rather than depending too much on oil to liberate Nigeria from a mono- product economy.

Unplanned exploitation of mineral resource like crude oil has led to gas flaring, which produces harmful environmental heat, which scorches surrounding soil and makes vegetation and farmland look parched. Natural gas consists of hydrocarbon (methane, ethane, propane, and butane) as well as additives like ethylene, butylene and impurities such as sand, debris, and mercury. Over exploitation and extraction has contributed to high pollution of the environment through activities, such as gas flaring, disposal of liquid waste (gas condensate), and accidental gas flaring from system leakage or explosion. Chemicals such as carbon dioxide, carbon monoxide, nitrogen oxide, water vapour and sort of carbon particles entrapped sand(silica), heavy metals and in combustibles present in the gases, become ionized at the high combustion, thus temperature when reacted with the atmospheric water resulted to acid rain which is dangerous to human health, vegetation and buildings.

The effect of unplanned exploitation of mineral resources in Nigeria has negative effect on the environment and humans. Some of the effects include:

- Adverse effect on human health. For example, respiratory illness, and cancer.
- Acid rain harms agriculture, forest, animals, human health, aquatic life, drinkable water in the ponds and lakes, etc.

The exploitation of environmental resources is vital for human existence; however, the types of practice, the technology applied and legislation in place is inimical to both humans and the environment.

5. Recommendation

We suggest that environmental impact assessment on areas where exploitable resources occurs be carry out before proper mining or exploitation and; that all the international laws, treaties, protocols, and multilateral agreement should be honoured and implemented.
The country should create enabling laws and environment for proper harnessing of the resources. The law of the land should be supreme therefore respecter of nobody.

The environment and the people of the areas where resources are exploited should be treated with respect and dignity; and mutual agreement should be reached before exploitation of resource is carried out to avoid crisis.

6. Conclusion

Scientist, Environmentalist, Government and her agencies, Non- governmental Organizations and Social critics have observed over the years that unplanned exploitation and mining of environmental resources has caused more harm than good to both the environment and human. The study shows that the increasing incidence of heart diseases, cancer, and even restiveness in some parts of the country can be attributed to the shabby exploitation of natural resources. International standards on exploring mineral resources should strictly be applied in Nigeria. Therefore, Nigeria as a member State of many MEAs should actualized all the international treaties on environment and all the MEAs, which she has signed.

The government, companies and all involved resources exploitation should see beyond immediate gain and riches. They should focus on the effect of exploitation activities on the environment in one hand and long run effect on the people.

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