

# Environmental laws and management agencies in Nigeria— what hope for desecrated landscape

## Abstract

This work seeks to address the challenges of landscape desecration using the available environmental laws and management agencies. It has been discovered that Nigeria has numerous environmental laws of international standard, yet pollution and desecration of urban environment and landscape is on the high. The work discovered that the challenge is not the laws, but the implementation of the laws by not just the management agencies but the law enforcement department of the state. Further investigation shows that attitude of the people and the compromising stands of the heads are the major hiccup in the environmental sorry state of the landscapes. The paper suggested how the already environmental laws and the management agencies saddled with handling of environmental related issues can effectively stop the wanton destruction of landscape and recovering the already desecrated ones.

**Keywords:** Desecrated landform, environment, environmental laws insecurity and management agencies

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**Abbreviations:** UNCLOS, united nation convention on law of the sea; CBD, convention of biological diversity; UNCCD, united nation convention to combat desertification; CITIES, convention on international trade on endangered species; CWIIEWH, convention on wetland on international importance especially as waterfowl habitat; UNFCCC, united nation framework convention on climate change; ICLS, international convention for the safety of life at sea; ICEIFCOPD, international convention on the establishment of an international fund for compensation for oil pollution damage; ICPPS, international convention for the prevention of pollution from ships; FRIN, forestry research institute of nigeria; NBMA, national biosafety management agency; NEREA, national environmental standards and regulations enforcement agency NOSDRA, national oil spill detection and response agency; NEMA, national emergency management agency; NCF, nigerian conservation foundation; FMEHUD, federal ministry of environment housing and urban development; FEN, friends of the environment nigeria; FMOE, federal ministry of environment

## Introduction

The need for law in every society is to check the excesses of individuals and to protect citizenry and the environment from abuse. Environment according to Arokoyu et al.<sup>1</sup> means all the external conditions influencing the development of any living organism. This involves the circumstances, object, or conditions by which the living organism is surrounded. Dearden et al.<sup>2</sup> defined environment as the combination of the atmosphere, hydrosphere, cryosphere, lithosphere and biosphere in which humans and other leaving species and non-animate phenomena exist. Precisely, environment is the external conditions, resources. Stimuli etc. with which an organism interacts. Getis<sup>3</sup> defined environment as the 'surroundings; the totality of thing that in anyway may affect an organism, including both physical and cultural conditions; a region characterized by a certain set of physical conditions'. Humans history is said to be largely written in terms of the struggle between man and nature over the terms of man existence<sup>4</sup> and for the most of human history the principal threat to man come

from man himself<sup>5</sup> as he make a living and live a good life using natures endowment. Kim and Weaver<sup>6</sup> agreed with Usoro<sup>5</sup> when they argued that there is a global consensus.....that bio diversity, the environment and the biosphere are in perilous state and the current state of these natural system have been caused by human activities. Science and technology has taken man to moon and space. Man from earth has learnt, ore about distant object like stars, sun and ocean deep but ironically man could nit dispose his water properly. Man could not converse his back yard farm and garden as population increases, so environmental issues increases. Population of different kind is before us. Useful land hitherto has been desecrated, polluted and destroyed by man without considering the environment and biodiversity.

Berger<sup>7</sup> stated that "only humans cause landscape disturbances and that of the ecosystem away from the human influence, are therefore in an undisturbed state". This position supported<sup>8</sup> earlier warning when he noted that "Man cannot create material things.... His efforts and sacrifices result in changing the form or arrangement of matter to adapt it better for the satisfaction of his wants. As his production of material product is really nothing more than a rearrangement of matter which gives it new utilities, so his consumption of them is nothing more than a discouragement of matter which diminishes or destroys its utilities. These activities of man have consequences. The Bible was on point at Ecc.4:1 and Ecc.8:9 that stated again I turned my attention to all acts of oppression that go under the sun, I saw the tears of the oppressed and there was no one to comfort them. And there oppressors had the power, and there was no one to comfort them. (ECC 4:1). All of this I have seen, I applied my hearts to every work that has been done under the sun, during the time that man dominated man to his harm.

There is a growing global concern for the preservation and conservation of the environment. This is because of the realization that every human being has the right to environmental protection because the quality and standard of human life and healthcare, that a person enjoys and the survival of man depends entirely on the environment from which mankind derives his livelihood.<sup>9</sup> It is based on this that scholars and policy makers especially environmentalist

and geographers have worked very hard in synergy with activists and NGOs to inform the people and government on the consequences of the neglect of the series of protocols and treaties which they are party to (Government). It is also awake up call for all to know that they are destroying themselves and their homes, yes indeed our future. Environmental laws therefore are defined environmental law as the collection of laws, regulation, agreement, and common law that governs how human interact with their environment. Celia et al.<sup>10</sup> defined environmental law as principles, policies, directives and regulations enacted and enforced by local, national or international entities to regulate human treatment of the non-human world. The purpose of environmental law is to protect the environment and create rules for how people can use natural resources. Environment laws, not only aim to protect the environment from harm, but they also determine who can use natural resources and on what term. Finally, environmental law or environmental and natural resources law is a term used to explain regulations, legislations and treaties designed to protect the environment from damage and to explain the legal consequences of such damage toward government, private entities or individuals.

The workability or usefulness of environmental laws depends on the implementation and execution of the laws. Therefore, it beholds the environmental management agencies, who are implementers of the environmental laws to make the law functional and effective. The term “environmental law” does not just cover government legislation. It can also describe a desire by businesses and other organizations, and their regulators to work toward improving ethical principles by setting regulation and industry standard for operating licences. These are not laws per se but at as such within a regulatory framework. Environmental agencies are commissions, bodies, ministries or organization established by law for oversight, administration and protection of the environment and its resources against misuse and degradation from human resources. So, environmental agency or environmental protection agency is an organization or commission that is established within a government or outside a government for environmental protection, management and preservation of ecological resources. They added that these agencies also have to protect the environment from misuse of its resources by human’s degradation of the environment in matters of climate change. The proper management of the environment is necessary for human to remain earths’ environmental resources to the future generation.

Management is the exploration, appropriate use and protection of natural resources and the prevention of waste as well as conservation.<sup>11</sup> The negative impacts of man’s activities to the environment are grave dangers to the survival and wellbeing. Purposeful activities to check this grave danger constitute environmental management. Alexander<sup>12</sup> defined Environmental Management as a process that anticipates and avoids waste and solve environmental and resources conservation issues. It is concerned with the understanding of the structure and function of the earth system, as well as the ways in which humans relate to their environment. It is concern the description and monitoring of environmental degradation due to human activities. Since the environment is concerned with meeting and improving provision for human needs and demands on a sustainable basis with minimal damage to natural habitats and ecosystems.<sup>13</sup> Landscape according English Dictionary is a picture representing a scene by land or sea, actual or fancied, the chief subject being the aspect of nature, as fields, hills, forests, water, etc. for this work landscape is define as a beautiful land or natural habitat.

Desecrated landscape is a spoilt or a damaged landscape. According to word net dictionary desecrated mean treated with contempt. Desecrate means to treat something sacred with violent dis respect. To violate, profane, defile, debase, dishonour, destroy, deface, degrade or dishonour a landscape. Unsustainable oil exploration activities especially in the Niger Delta region of Nigeria has rendered the her to be one of the five most severely petroleum damaged ecosystem in the world.<sup>14</sup>Base on the aforementioned the subject matter is concerned on how collection of laws, regulations are used by commissions or organisation or authorised body (agencies) to improve human need without destroying the natural resources and its habitat (environment) or to restore an already damaged landscape.

### Reason for environmental laws

Aloni<sup>15</sup> stated that the main function of environmental law is the protection of human health as well as the environment. Some practices might interfere with the safety of human health and environment, and the work of the law is to protect people in such instances. For instance, the use of harmful pesticides is one of the areas where the environmental law is concerned about. The point here is to make sure that the practices used in the environment where possible do not cause harm to the environment, human or animal health. It must protect environment regulatory officers. The individuals that work tirelessly to see that environmental laws are obeyed also need protection, so that defaulters will not intimidate them. It must address the handling of waste and other harmful products and their management. If wastes and toxic products are not well managed, it will affect the environment. Environmental laws therefore address how waste should be managed. The law provide requirement for establishment of any industry, firm, etc. Such requirement includes EIA and regular EA. This will ascertain if the industry in the first place should be established or not

### Some relevant laws on landscape

The level of landscape degradation is beyond mere perception, therefore the relevant environmental laws explains the extent to which the landscape has been damaged or recovered. In Nigeria there are many laws on environment, but this work will focus on those that involve landscape. But it is important to note that the nations of the world keyed in to United Nations (UN) environmental regulation.

Some of the laws include:

- I. African Charter on Human Rights (Ratification and Enforcement) Act. Cap. (L.F.N) 1990. This act supports Nigeria’s obligations under the African Charter on Human and people’s Right and recognizes a right of people to a general satisfactory environment favourable to their development.
- II. Associated Gas Re-Injection Act. Cap.12 (L.F.N) 1990. The Act was aimed to end the wasteful and destructive flaring of gas by compelling oil companies to develop scheme for utilization or re-injection of all gas produced in association with oil by 2010, except with the permission of the Minister of Petroleum Affairs.
- III. Harmful Waste Special Criminal Provision etc., Act Cap. 165, L.F.N The Act make it an offence to carry, deposit dump, be in possession for the purpose of carrying, depositing or dumping any harmful waste anywhere in Nigeria soil, inland waters and sea, including the Exclusive Economic Zones of Nigeria (E.E.Z).
- IV. Land Use Act Cap. 350, L.F.N 1990. The Act aimed to provide measures for making land easily available for development

and agricultural purposes, primarily by vesting land in a State Governor, requesting his consent for the transfer or alienation of interests in land and conferring him with power to revoke the right of occupancy for over-riding public purposes.

- V. Mineral Act Cap. 286, L.F.N 1990. The Act regulate non-oil mining of minerals and prohibits mining operators from cutting or taking protected trees without consent; pollution of water course, unauthorized exploitation of water, water bodies, sacred areas, and other objects of veneration.
- VI. National Environmental Protection (Protection Abatement in Industries and Facilities Generating Waste) Regulations S49 of 1991 L.F.N. These regulations ban the unauthorized handling of toxic waste, discharge of effluent, industrial solid waste etc., in drains, water bodies, municipal landfill etc. They require industries to install pollution monitoring devices with a view to making regular report of intended and accidental discharge of solid, gaseous or liquid waste and also empower FEPA to require existing industries to conduct environmental audit (or E.I.A, for new projects) or to prevent the start-up of any industry or facility that will constitute a new source of pollution.
- VII. Environmental Impact Assessment Decree No.85 of 1992. The Decree requires proponents of development projects to assess the impact of such project on the environment, designing mitigation measures as may be necessary and to refrain from executing such project unless FEPA is satisfied that such impacts are negligible to that adequate measures to mitigate damages to the environment have been initiated.
- VIII. (Oil Mineral Producing Areas Development Commission Decree No. 23 of 1992 L.F.N. The Act established the Oil Mineral Producing Area Development Commission primarily to use sums received from the Federal.

Account for tackling ecological problems which have arisen from exploration of oil in the oil mineral producing areas and to work with government and oil companies to control and tackle the problem of oil pollution and spillage.

- I. Criminal Code Act Cap.77 L.F.N of 1997. The Act contains the basic criminal law offences that relate to damage to the environment, public health and natural resources.
- II. Niger Delta Development Commission Act, Cap. N68. LFN2004. This Act facilitates the rapid, even and sustainable development of the Niger Delta into a region that is economically prosperous, socially stable, ecologically regenerative and politically peaceful.

The importance of environmental law is to determine liability for damages to the environment. Liability in the other hand is capable of promoting compliance because of the deterrent effects on polluters for damages to be paid, and through conformity to standards imposed on polluters as requirement for insurance. The extent of the liability should be proportional to the damage to the ecosystem. An important fact is that fault liability should be the principle of liability for environmental damage, but when ultra-hazardous activities that involve mega-scale climate or weather modifications are involved, absolute liability should form the principle of liability. The intricate legal backbone for payment to keep the environment clean must also include a consideration of the relationship between the legal instrument and the nature of the society where the law will operate; otherwise the law may not achieve its aim.

### Some international treaties Nigeria is party to

- UNCLOS: United Nation Convention on Law of the Sea, 1982(1994)<sup>16</sup>
- I. CBD: Convention of Biological Diversity, 1992 (1993)
- II. UNCCD: United Nation Convention to Combat Desertification, 1975 (1994)
- III. CITES: Convention on International Trade on Endangered Species, 1973(1987)
- IV. RAMSAR-CWIIWH: Convention on Wetland on International Importance Especially as Waterfowl Habitat, 1971(1975) The convention was named after the host city of Ramsar in Iran.
- V. UNFCCC: United Nation Framework Convention on Climate Change, 1992(1994)
- VI. Heritage: Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972(1975)
- VII. Basel: Convention on Conservation of Migratory Species of Wild Animal, 1979(1983)
- VIII. Ozone: Convention for Protection of the Ozone Layer and Montreal Protocol on Substances that Depletes the Ozone Layer, 1985(1988)
- IX. ICLS: International Convention for the safety of Life at Sea, 2004
- X. ICEIFCOPD: International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971(2006)
- XI. ICPPS: International Convention for the Prevention of Pollution from Ships, 1973(2007).

### Some environmental agencies in Nigeria

In Nigeria, as part of the measures taken by the government to preserve the environment and its resources, protect Nigerians from ecological nuisance and hazardous waste, to combat and prevent pollution in Nigeria, the federal government of Nigeria and several Nigerian states have established various agencies and organizations. These agencies are guided and function in accordance to the all the environmental laws and acts in Nigeria.

The following are some of the Agencies and Environmental organizations in Nigeria.

- I. Forestry Research Institute of Nigeria (FRIN)
- II. National Biosafety Management Agency (NBMA)
- III. National Environmental Standards and Regulations Enforcement Agency (NEREA)
- IV. National Oil Spill Detection and Response Agency (NOSDRA)
- V. National Emergency Management Agency (NEMA)
- VI. Nigerian Conservation Foundation (NCF)
- VII. Federal Ministry of Environment, Housing and Urban Development (FMEHUD)
- VIII. Friends of the Environment Nigeria (FEN, NGO)
- IX. Federal Ministry of Environment (FMOE).



## Challenges of environmental law implementation

The agencies saddle with the responsibilities of environmental law implementations in Nigeria is more of politicians that care more of their pocket than the quality of the environment. Most of them are tribal and therefore anything outside their region is not too bad. Some never even cares whether it is happening in their backyard, so long the benefit out of it. Selfishness is the greatest challenge in achieving a serene environment in Nigeria. Poverty is a major challenge to implementing environmental laws in Nigeria. A man or community that is living below means standard of living can give out their land for dumping of unfriendly environmental materials; so long they have survived the month, undermining the future consequences.

Another hiccup for implementation is the fact the ministry of environment is in charge of implementation. It simply implies that political approach is used for environmental issues. The fact that technicalities in law are not easily understood by politicians, limit professionals or technocrats to discharge their responsibilities as a management personnel. The activities of illegal miners, poachers, lumbers, and selfish business men are difficult to track. Insecurity and militancy also make it almost impossible for the agency to discharge their duty. The awareness level concerning environment is very low especially in the local areas where most of the degradation takes place. The state government and the local government are more or less rubber stamp in the hand of federal government agencies. The tendency of the various agencies and environmental management organization to operate in an uncoordinated and independent manner also pose grave setback to the goals of sustainable environmental management in Nigeria. The economic situation of the country is also tempting to the honesty and proficiency of these agencies personnel. Similarly, the new culture where every Nigerian is seen to be corrupt or understand what it mean to accept bribe or tip back. Pressure from family, friends, colleague, superior officers and sometimes community leaders can sometimes limit the efficiency of the environmental agency. Despite the challenges, environmental laws and the management agencies have actually lived up to expectation in some quarters. The filling of dumping pits, cleaning of desecrated lands, opening of block drain channels, effective removal of refuse and solid waste to mention but a few.

## Common environmental problems in Nigeria

Environmental problems can be classified into two – the natural and the anthropogenic factors. The natural factors include – Soil wash and sheet erosion, Coastal erosion and Marine erosion, Flooding, particularly coastal flooding and river flooding, Drought and desertification. The Anthropogenic factor are – Oil pollution, oil well blow-outs and other associated discharges, Overpopulation and squatter settlement, Industrial waste, water, soil and air pollution, Urban waste, non-biodegradable waste and used oil, International waste dumping, Biodiversity loss, etc.

## Failures of environmental laws and regulatory agencies

Despite the laws and agencies that abound the environment are not adequately protected or taken care of. The sorry state of the environment, collapsing of building across the nation, gas flaring and indiscriminate dumping of waste and scattering of well deposited waste are pointer that environmental laws and management agencies are not effective in Nigeria to say the least. A close study of the environment and landscape in Aba, Onitsha, Port Harcourt and Owerri is shocking.

Wastes are stocked on the median strip or central reservation. Well bagged wastes are tore open and scattered by scavengers; the issuing odours are obnoxious and dangerous to health. The environment management agencies are doing little to conserve the environment. In Port Harcourt where the agency in charge of refuse collection directs that refuse should be emptied from 6pm, this law is not effective as the well packed garbage will be scattered by some individual who are above the law, because they have people in power.

Associated Gas Re-Injection Act Cap.12 (L.F.N) 1990, This Act is aimed to end the wasteful and destructive gas flaring by compelling oil companies to develop scheme for utilization or re-injection of all gas produced in association with oil by 2010, except with the permission of the Minister of Petroleum affairs. Gas flaring is one clear area that shows the ineffectiveness of the management agencies in Nigeria. The post to ending date of gas flaring has been shifted too many times, from 2010 to 2012, to 2015; yet 2021 gas flaring is still going on in Nigeria desecrating the landscape. Wetlands are on constant attack by illegal bunkers, oil spillage, lumbers and chemical crazy fishermen. Foreigners who obeys environmental laws in their countries, comes to Nigeria try to experiment to see the consequences of breaking environmental laws. The toxic dumping of Koko in Delta State is evidence to this. Sometimes when the agencies tend to work, money exchanges hand and the activities continues. The biodiversity (flora and fauna) are not protected, especially in the northern and southern part of Nigeria. Trees are fallen, animals poached without protection. Trees are fallen indiscriminately, animals poach without protection, sites and reserves are devastated and solid minerals are wantonly excavated without license. The laws are there but the agencies (implementers) are constraint from discharging their duties due to 'Nigerian factor. Oil pollution is a global menace to the environment and its dependants, and the remediation of oil contaminated soils, sediments and water is a huge challenge for the environmental research.<sup>17</sup> Oil pollution affects soil fertility, since majority of the people are engaged in agriculture, whichever way their livelihood is greatly affected by pollution. This in a way has led to youth restiveness within the region.

One of the environmental laws is the criminal code Act Cap. 77 L.F.N of 1997. The Act contains the basic criminal law offenses that relate to damage of the environment, public health and natural resources. Shell Petroleum Development Company (SPDC) damaged Ogoni land and it's environ in Niger Delta region of Nigeria. Nigerian Environmental management agencies, despite having the laws could not protect them, rather protecting them; tanks were order to kill indigenes at Umuechem in Etche in Rivers State and Odi in Bayelsa State, for environmental degradation related matters. It took a foreign court sitting in Holland to fault SPDC for the damages done on Ogoniland. The environmental management agencies are watching and doing nothing for the clean-up of Ogoniland.

Rivers State and Port Harcourt in particular are facing a serious environmental problem – soot. The agencies have not come up with any solution to it. Not too long, billions of fishes in Bonny and Oyorokotu part of Atlantic Ocean in Rivers State, Nigeria died, (Rivers State Ministry of Environment, 2020). The course is not yet known. Figure 1 shows the billions of died fishes. Rivers State waste management agency (RIWAMA) is the State waste management outfit that focuses on providing better and cleaner environment, low carbon emission and conversion of waste to wealth. Safe environment must not be a stinking one; it must not be the one that house fly pitches

on the major road. Every morning and evening, sometimes in the day, you see waste on the median split, the so-called staff RIWAMA that should keep the state clean, are seen tearing rapped and packaged waste to find valuables they will sell to scavengers, thereby profaning the environment. The good work of Rivers State and RIWAMA is negated by the activity of the lawless scavengers who are feared due to their murderous tendencies, coupled with the fact the most often their brothers are in charge of the law enforcement agencies. Most often when taken to court they pretend not understand the language of the court. There are also cases of just a call the defaulter is out.



**Figure 1** Dead crocker fishes on the bank of bonny river (Author, Photo).

There are inadequate policies operative in Nigeria for coordinating and monitoring the relationship between environmental management and sustainable development. This led to poor enforcement of the environmental protection legislations in Nigeria. An ineffective enforcement strategy is one of the environmental laws enforcement challenge. Most of the enforcement strategies and mechanism for collection and management of environmental statistics of facilities and service providers including waste transporters, waste vendors, landfills area, companies effluent emission data, carbon footprint, sewage treatment plants and other recycling companies are neither developed nor implemented.<sup>18</sup>

## Recommendations

- i. Specific function and responsibility should be given to each of agencies rather than moulding up responsibilities, which confuses rather than complement the activities of the agencies to achieve the purpose of the set laws.
- ii. Professionals should be engaged in environmental policy formulations and implementations. This aspect should be depoliticized.
- iii. Strict punishment should be given to environmental law defaulters, with subsequent default with stricter punishment.
- iv. Local attentions should be given to local environmental problems, instead of adopting foreign approach that is not practical within a given area. Peculiar nature of each area must be considered, and EIA taken before any remedial action.

- v. Any officer of environmental regulatory agencies caught in corruption practice should be dismissed without benefit and the firm or person involved with the staff should be made to pay high penalty. If it is a firm the asset should be liquidate.
- vi. The locals and citizens in general should be well informed on the danger of violating or desecrating the environment.
- vii. Environmental friendly villages, towns, institutions, and persons should be rewarded or at least encouraged. This could be by tax reduction or awarding of new contract.
- viii. No person should be seen as above the law. People in power, should stay off environmental matter. That is they should not cajole staff to taken wrong decision out of fear.<sup>19-24</sup>

## Conclusion

No matter how good a law may seem, no matter the number of agencies authorised to implement the laws, if the political will and the enabling environment to carry out such function is lacking, then the law or laws and the agencies will fail. Corruption has eaten deep into the fabric of Nigerian society, to the extent that law enforcement agents protect offenders than the honest citizens. The Federal government should provide security to law enforcement agencies to carry out their duty. The duplication of responsibilities is rather confusing than complementary in achieving the set goals of the law. Nigeria as a country has established many environmental laws which if implemented will enhance the environmental and minimize environmental related problems. Similarly, management agencies has also been put in place to implement the environmental laws, but sadly both the government and the agencies have done very little and achieved not much in terms of implementation the laws and prosecution of defaulters.

Lack of clear cut responsibilities of various agencies could lead to confusion on the side of the citizenry on whom to report to on specific case, and conflict among the agencies on who to preside over an issue or a matter. This has led some agencies to water down standard, thereby adorning themselves to defaulters that will likely come to them for protection against other more serious agencies. Government should provide security to environmental regulatory agencies to enable them carry out their duties. Besides, the government should set environmental data bank for the country. Finally, attention should be given to common problems within local areas and States using sustainable environmental solutions, rather than copying what is tenable in other countries with different climate, soil and vegetation.

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## Conflicts of interest

There are no conflicts of interest.

## References

1. Arokoyu SB, Umeuduji JE. *Perspectives on the Human Environment*. Port Harcourt. Amethyyst and Colleagues Publishers, 2004.
2. Dearden P, Mitcheck B. *Environmental Change and Challenges*. A Canadian Perspective. Canada, Oxford University Press, 2009.
3. Getis A. *Introduction to Geography*. 7<sup>th</sup> edn, McGraw Hill, 2000.
4. Barkley RW, Sackler DW. *Economic Growth and Environmental delay: The Solution becomes the problems*, New York, Harcourt Brace Jevonorich Inc, 1979.

5. Usoro E. *Environmental Management and Conservation*. In: Ikhuoria IA editor. *Cartography and Rural Development in Nigeria* 1994. Nigerian Cartographic Association. Woodwell, GM “*Succession and Adam Smith*” *Bioscience*, 1974;24:81–87.
6. Kim, FR, RD Weaver. (eds) *Biodiversity and Landscapes: A Paradox of Humanity*. Cambridge, Cambridge University Press, 1994.
7. Berger AR. *Natural Environment Change: A Challenge to the DSR Framework*. In: Moldun B, et al., editors. *Sustainability Indicators. A Report on the Project on Indicators of Sustainable Development* Paris 1997.
8. Marshall A. *Principles of Economics* 9<sup>th</sup> edn. New York: Macmillan, 1961.
9. Abegunde B et al. *Environmental Law and Development*. Petoa Educational Publisher, Ado-Ekiti, 2007.
10. Celia I. Sustainable Environmental Law in United State of America. *International Journal of Environmental Sci and Natural Resources*. 2015;4(4):12–30.
11. Imoh. *Perspectives on Environmental Management*. Immaculate Publications Limited, Enugu State Nigeria, 2009.
12. Alexander BC. *Lecture Monograph on Agroclimatology ND 2*. Captain Elechi Amadi Polytechnic, Rumuola, Port Harcourt. Rivers State, 2019.
13. Barrow CJ. *Environmental Management and Development*. London Longman, 2005.
14. Anifowose B *Assessing the Impact of Oil and Gas Transport on Nigeria's Environment*. Postgraduate Research Conference Proceedings 1, University of Brimingham, UK, 2008.
15. Aloni C. *Lecture Monograph on Urban Mass Transit ND2*. Captain Elechi Amadi Polytechnic, Rumuola, Port Harcourt. Rivers State, 2018.
16. Cunningham P, et al. *BN Environmental Science: Aglobal concern*. 7<sup>th</sup> Ed, McGraw-Hill Inc. New York, USA, 2003.
17. Chorom M. Bioremediation of a Crude Oil Polluted Soil by Application of Fertilizers. *Iran Journal of Environment Health Science and Engineering*. 2010;7(4):319–326.
18. *NESREA Address for Many Challenges of National Environmental Standard and Regulation Enforcement Agency*. 2014. p. 1–21.
19. Ecclesiastes Holy Scripture. *New World Translation*. 2013;4:1–16.
20. Genesis Holy Scripture. *New World Translation*. 2013;1:1–28.
21. Geomatics International Inc. *Vegetation and land use change in Nigeria between 1976/1978 and 1993/1995*; Prepared for FORMECU, *Federal Dept. of Forestry*, Abuja, Nigeria. 1998.
22. Makinde, O and T. Adeyoke *Environmental Laws. The International Comparative Guide to PFI/PPP Projects*. Published by Global Legal Group Ltd. London, 2007.
23. Nwoko CO. Evaluation of Environmental Impact Assessment System in Nigeria. *Greener Jour of Env'tal Mgt and Public Safety*. 2014;2(1):22–33.
24. Solomon O, Bankole PO and Adeyinka. *NA Environmental Statistics: The situation in Federal Republic of Nigeria, Africa*. 1995.