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Flooding and Erosion in Rivers State: A review of Environmental Laws and Policies for Sustainable Development

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ABSTRACT

Floods are both man-made and natural occurrences. Sadly, the impact of flooding and erosion significantly impacts the environment and the livelihoods of people. Floods and erosion that killed some of the most people and destroyed properties recorded in Nigeria were caused directly by human actions exacerbating climate change. There are laws and policies that are in place to provide the framework to guide human excesses and for mitigating floods and erosion; however, considerable attention has yet to be given to review to what extent these laws and policies have been implemented. Thus, the article discusses Rivers State's existing environmental laws and policies regarding flooding and erosion. The failure to implement and adhere to the relevant environmental laws has resulted in many floods and erosion in Rivers State. Hence, the relevant state actors need to demonstrate political will by providing the resources and facilities that facilitate the sustainable implementation of environmental laws and policies to curb server flooding and erosion in River State.

Introduction

Climate change resulting from global warming is attributed to anthropogenic influences, leading to many consequences, one of which is flooding. It is one of the major environmental crises recurring every year in Nigeria from one region to another. Although flooding is a natural phenomenon caused by antecedents such as melting icebergs, hurricanes, and overfilling major rivers, many other flood types are human-caused (Magami, et al., 2014). The heavy rains that caused the floods that killed over 600 people in Nigeria this year were about 80 times more likely as a result of human-caused climate change (Agence France-Presse, 2022). Terhemba (2014) reports that recent floods and consequences worldwide are becoming too frequent and threatening sustainable development in human settlements. In the same posture and belief, Ezeigbo (1997) also believes that the flooding and erosion phenomenon is a major environmental problem prevalent in the rainforest region of Nigeria. It causes ecological havoc, destroying lives, property, agricultural land, and social infrastructure.

Floods are among the most devastating natural disasters in the world, claiming more lives and causing more property damage than any other natural phenomenon. In Nigeria, though not leading in claiming lives, flood affects and displaces more people than any other disaster; it also causes more damage to properties. At least 20 per cent of the population is at risk from one form of flooding or another (Etuonovbe, 2011). Among the many impacts of flooding on the environment reiterates Echendu

(2019) position that flooding is the most serious with wide-reaching impacts, especially Nigeria's numerous challenges as it struggles to achieve the Sustainable Development Goals (SDGs). A few minor earthquakes have been reported in Nigeria, but the most significant hazards posed by natural disasters during the last 20 years have been floods, soil and gully erosion and landslides. Flash floods frequently occur in various cities during the rainy season, but the hazard is most significant in those places where the terrain is steep, surface run-off rates are high, streams flow in narrow channels, and where severe thunderstorms prevail (Kalu & Uma, 1988).

The issues of flooding and erosion are age-long environmental issues that have endemic and are a catastrophe to the environment and livelihood. While most flooding is natural, some result from man's activities. When it is the result of man's activities on the environment, unfortunately and incidentally, they result from poor adherence to and implementation of environmental policies and laws. In the Niger Delta area of the country nearly 24000 km² of the territory is threatened annually by severe riverine floods. Soil and gully erosion present the most serious environmental problem in the eastern states of Nigeria (Kalu & Uma, 1988). Ezezue, Agha et al. (2017) researched the effective management of Flooding in Nigeria (a Study of Selected Communities in Anambra State) and x-rayed the importance of effective management of flood in Nigeria with particular reference to some selected communities in Anambra State (Aguleri and Umuleri). The paper tried to determine how building dams across the river channels could help effectively

manage floods in Anambra State; and found that there was no proper flood management in the studied communities.

Adebayo's (2014) study on environmental law and flood disaster in Nigeria: the imperative of legal control noted that Nigeria will continue to labour under the pains of flood disaster unless there is a radical approach to avert the disaster. The paper argued that to meet the challenges of flooding; and the consequence, there is a need for government to promote environmentally friendly planning policies and inculcate into people habits that are supportive and protective of the environment. Wonah (2017) examined floods in Nigeria and the need to adopt a more viable and permanent solution to floods in Nigeria. The paper believes that the Nigerian state should move beyond the mere provision of relief materials to consciously and proactively curb the menace of flood in Nigeria. The paper argued that curbing the menace of flood in Nigeria would require restructuring and reactivating the institutional framework in control and prevention.

Although flooding constitutes serious environmental and livelihood problems, the many causes of flood can be categorized into man-made and natural. Some natural antecedents are melting icebergs, hurricanes, overfilling major rivers, and climate change. Some manmade causes include the recent release of excess water from the Lagdo Dam in nearby Cameroon and global warming. Like any other state in Nigeria, Rivers has had a fair share of the impact of Flooding, especially as it has resulted in erosions in parts of Rivers state. Although the causes of flooding and

erosion in rivers state are both manmade and natural, this paper will shed light on the role environmental laws and policies have played in flooding and erosion in Rivers state. Invariably the question raised in this paper is to review the impact of environmental laws and policies on flooding and erosion in Rivers state. Consequently, extant environmental laws, especially state environmental policies, will be reviewed to ascertain their culpability or otherwise in the causes of flooding and erosion in rivers state.

Conceptual Review

Flooding

Flooding occurs when land that is usually dry is covered with water from a river overflowing or heavy rain; flooding occurs naturally on the flood plains, which are prone to disaster (Etuonovbe, 2011). A flood is a natural event that can have far-reaching effects on people and the environment. Any land usually above water level is said to be flooded if it goes underwater for a period arbitrarily defined as one or two hours (Senarathne et al., 2006). Mandych (nd) defined flood as "a short-term or seasonal inundation of Earth's dry land areas by water from any source and due to action of different forces and under the influence of various factors". United States Department of Commerce (2005) defined a flood as the inundation of a normally dry area caused by an increased water level in an established watercourse.

Erosion

Soil erosion is the detachment and movement of soil material. The process may be natural or accelerated by human activity. Depending on the local landscape and weather conditions, erosion may be very slow or rapid. "Soil erosion is a naturally occurring process that affects all landforms. In agriculture, soil erosion refers to the wearing away of a field's topsoil by the natural physical forces of water and wind or through forces associated with farming activities such as tillage" (Jim Ritter, 2018). "Erosion, whether by water, wind or tillage, involves three distinct actions – soil detachment, movement and deposition. Topsoil, high in organic matter, fertility and soil life, is relocated elsewhere "on-site", where it builds up over time or is carried "off-site", where it fills in drainage channels. Soil erosion reduces cropland productivity and contributes to the pollution of adjacent watercourses, wetlands and lakes."

Environmental Policies

Environmental policy is essentially concerned with how best to govern the relationship between humans and the natural environment for their mutual benefits. Environmental policy concerns how best to govern the relationship between humans and the natural environment for mutual benefit (Benson and Jordan, 2015). Environmental policy is a set of actions launched by society and individual stakeholders (the interaction of various economic, political and social structures) to implement environmental management and nature conservation strategy (Cogălniceanu & Bobylev, 2018). Van Beuren (2011) defined

environmental policy as any measure by a government, corporation, or other public or private organization regarding the effects of human activities on the environment, particularly those measures designed to prevent or reduce harmful effects of human activities on the ecosystem".

Environmental Laws

"Environmental law is the collection of laws, regulations, agreements and common law that governs how humans interact with their environment (Legal career Part, 2020). Cheremisinoff and Bendavid-val (2001) noted that environmental laws and regulations represent the minimum environmental standards or practices acceptable to society. In other words, it is the environmental standards or practices acceptable to society. It is a body of law intended to protect the environment; by regulating activities that cause pollution, such as fossil fuel emissions and the dumping of wastes; by prohibiting specific inconsistent uses of land designated as federal parkland; and by providing regimes of protection for endangered species. Environmental and natural resources law; is a term used to explain regulations, statutes, local, national and international legislation, and treaties designed to protect the environment from damage and to explain the legal consequences of such damage towards governments, private entities or individuals (Mason, 2020).

1. Environmental Principles in managing the environment

There are various environmental principles that guide environmental policies. They include;

1. Environmental Integrity
2. Regulation principle
3. Cost principle
4. Polluter pay principle
5. Responsibility principles
6. Principle of sustainable development
7. Principle of equity and justice
8. Principle of environmental integration
9. Principle of human rights
10. Principle of democracy and participation. A few of these principles will be discussed to shed light on the issues of environmental protection

Accountability and Transparency: The need for transparency towards the public and stakeholders from those responsible is a growing expectation in the need to mitigate and treat environmental damage. We expect it from the government and industry towards the populations affected by it. UNEP (United Nations Environmental Programme) states the need to protect human rights on opinions and to seek and impart ideas. There is also a right to access information appropriately and time from governments holding data that might concern the public over any aspect of environmental protection without making it prohibitively expensive to do so. There should also be effective judicial proceedings against polluters and those responsible.

Cross-border responsibility: This is an international law obligation also set down by UNEP. It is defined as the obligation of governments to protect the

environment within their borders and to do what it takes to prevent a nation's activities from causing damage to neighbouring nations. It is seen as a potential limitation on the rights of sovereign states and therefore treated as a human rights issue.

Equity and Equality: This is not about gender, sexuality, or race equality when it comes to environmental protection, but for the right of succeeding generations to enjoy the same or better benefits than the generations that preceded it, according to UNEP. The biggest issues of the age include climate change and resource depletion, an issue that will affect coming generations as previous generations add to the depletion and environmental damage. It determines the responsibility of previous generations to the future. Naturally, this concerns not just resource control; but also pollution mitigation.

Polluter Pays: Tied to responsibility and accountability, it is the core belief that those who cause damage should be responsible for the cleanup rather than expecting the public or others to do so, such as taxpayer dollars. Environmental remediation is a critical area of environmental protection, and it is on this basis that such roles exist within organizations.

Precautionary Principle: Often a hot topic and subject to furious debate, this international standard promotes the concept through The Rio Declaration that to protect an environment; a precautionary approach must be applied according to their capability. When there is a threat of damage, governments must not muddy the waters or use scientific uncertainty (either real or imagined) to

abdicate responsibility or to procrastinate over an issue.

Prevention: "Prevention is better than cure" is a mantra in many areas, and it's certainly true of ecology and environmental protection. It looks at ways of pushing the need for analyzing potential harms in such processes as risk assessment and puts in place measures for preventing incidents, accidents and worst-case scenarios. The cost of prevention (financial or otherwise) is always better than the long-term harm and massive expense necessary with a cleanup, for example.

Sustainable Development: This legal term is thus: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" and is tied to the generational equity and equality principle. Interdependence, integration, and legal requirement of environmental impact are all key pillars of the idea. It came into force in 1972, although it's only become prominent recently. In 1983, the UN declared that the right to development should apply equally to present and future generations.

2. Environmental Agencies in Rivers State

- a. **The Rivers State Waste Management Agency (RIWAMA)**
- b. **Rivers State Ministry of Environment (RSMENV)**

Rivers State Ministry of Environment is a ministry of the Government of Rivers State established in 2003 to deal with matters relating to the environment. Its functions include formulating, implementing and

reviewing policies on the state's environmental/ecological programmes and projects. Some of the functions they perform include; Flood and Erosion and Coastal Zone Management, Environment Planning, Research and Statistics, Environmental Health and Safety, Claims, Compensations and Relief Inspectorate and Enforcement, and Pollution Control.

3. Selected Environmental Laws in Rivers State and Nigeria

a. Rivers State Interim Guidelines and Standards on Environmental Pollution, control and Management (2002)

Interim guidelines and standards related to six areas of environmental pollution control are issued by the Federal Environmental Protection Agency (FEPA). These guidelines and standards related to six (6) areas of environmental pollution control: Effluent limitations, (ii) Water quality for industrial water uses at point of in-take, (iii) Industrial emission limitations, (iv) Noise exposure limitations (v) Management of solid and hazardous wastes (vi) Pollution abatement in industries.

b. Rivers State Environmental Sanitation Authority Law (1984)

The State promulgates Rivers State Environmental Sanitation Authority Law for the regulation of policies and strategies aimed at promoting environmental hygiene, and sanitation and facilitating the disposal of refuse and other waste products

c. National Oil Spill Detection and Response Agency (NOSDRA) (2006)

d. Rivers State Environmental Protection and Management law (2019).

National environmental standards and regulation cement age agency (NESREA) act 2007

Administered by the Ministry of Environment, the National Environment Standards and Regulation Enforcement Agency (NESREA) Act of 2007 replaced the Federal Environmental Protection Agency (FEPA) Act. It is the embodiment of laws and regulations focused on the protection and sustainable development of the environment and its natural resources.

Section 7 provides authority to ensure compliance with environmental laws, local and international, on environmental sanitation and pollution prevention and control through monitory and regulatory measures.

Section 8 (1)(K) empowers the Agency to make air and water quality regulations, effluent limitations, control of harmful substances and other forms of environmental pollution and sanitation.

Section 27 prohibits, without lawful authority, the discharge of hazardous substances into the environment. This offence is punishable under this section, with a fine not exceeding; N1, 000,000 (One Million Naira) and an imprisonment term of 5 years. In the case of a company, there is an additional fine of N50, 000; for every day the offence persists.

Environmental laws, policies and issues of flooding and erosion: The nexus

The current status and quality of environmental laws and institutions in Rivers State are mainly incapable of ensuring environmental sustainability in the state

and securing a healthy environment conducive to human wellbeing and development (Worik & Uzuazo, 2020). Chiadikobi et al. (2011) argued that the rapid urbanization and population growth of Port Harcourt city in the last ten years have led to uncontrolled and uncoordinated development of swamps, floodplains and natural drainage channels thereby aggravating the risk of flood hazards in the city.

Nemine (2015) noted that the 2012 floods were one of the worst in Nigeria, leading to the loss of lives and property worth millions of naira. The floods were unprecedented, and even though floods are a yearly occurrence in the country, the government lacked the capacity to handle disasters of such magnitude. Ayotamuno (2020) is of the view that studies the flooding of many communities in Rivers State and the destruction of their livelihoods, such as farm lands and markets, may have resulted from the increasingly deteriorating climatic parameters.

The issue of flooding in rivers state and Nigeria is duly to and can be attributed to the failures of environmental laws in Nigeria. Ikelegbe and Onwuemele (2012) gave credence to this position when they argued that some impediments to the implementation of the various environmental regulatory statutes in Nigeria are identifiably related to the limitation of the legal framework, institutional bottlenecks, corruption, inadequate funding, inadequate environmental impact assessment (EIA) and ignorance.

Umana (2018) noted that implementing environmental policies and strategies in Nigeria is currently fraught with specific challenges, cutting

across socio-economic, scientific and cultural frontiers. Some of such key challenges include: Overlap of Authorities, Inadequate Access to Environmental Information, and Bureaucratic Obstacles. High cost/bureaucratic Bottle-necks of Environmental Instruments and Nonexistence of a defined Regulatory Professional Body.

Ene and Agbazue (2011) explained the impact of environmental laws and policies on flooding and erosion when they argued that many of the environmental policies are outdated, many are fragmented. Many were not formulated with contributions from informed masses, not based on nationally generated baseline data. Rather, they are mostly guidelines and standards adapted from the adopted and approved materials of the appropriate system of the United Nations, thereby compromising socio-economic and climatic difference'.

Ibama and Wocha (2015) study on planning a response to water-related disasters in Nigeria: the Rivers State experience, pointed to the fact that flooding induced by the effects of natural causes has been seen to cause severe damage to people, damage to buildings, destruction of properties, health challenges, reduction of the aesthetic beauty of the

environment, increase in poverty level and death. Man-made causes of flood disasters are seen to occur in these towns and villages, being the centre of activity in many countries. Floods have brought about the displacement of many people in Rivers state and many countries. In some countries, all floods bring about the loss of human life and properties. These have degenerated into uncontrolled erosion in some of the affected communities. Many flooded homes are not habitable until they are fumigated and cleared debris adequately disposed of. In the area of policies, Town Planning will have some respite as it emphasizes proper settlement planning, effective spatial planning and the like to reduce the effect of these flood hazards further. In a recent development, Ofiebor (2020) hinted that Rivers State Waste Management Agency (RIWAMA) emphasized preventing flooding in urban areas and not building water channels, avoiding dumping of refuse in the drains and clearing drainages to accommodate volumes of water after each rainfall.



Source: Prime Newsnigeria (2019).

A section of the east-west Road at Nkpolu Junction was ravaged by flood, an example of the failures of the Rivers State Waste Management Agency (RIWAMA) to practically enforce the laws relating to indiscriminate dumping of refuse and the failures of the Rivers State Environmental Sanitation Authority Law to enforce the mandate of the its laws.



Source: BBC News (2019)

Flood in Rumukurushi, caused by lack of better drainage system. This explains another area the Rivers State Ministry of Environment is a ministry of the Government of Rivers State, established in 2003 to deal with matters relating to the environment, has failed in its functions of formulating, implementing and reviewing policies on the state's environmental/ecological programmes and projects, and also neglecting the functions they perform which include, Flood and Erosion and Coastal Zone Management, Environment Planning, Research and Statistics, Environmental Health and Safety, Claims, Compensations and Relief Inspectorate and Enforcement, Pollution Control.



Source: BBC News (2019)

Flooding in Akinima, Ahoada West forcing people to harvest their crop prematurely, this is another area the impact of flooding and erosion impacts significantly on the livelihood of the people.

Conclusion

Flooding and erosion are one impact of the both manmade and natural occurrences on the environment. For decades the issues of flooding have constituted endemic to the environment of Rivers state. Each time flooding occurs, the tendency for erosion is high as the devastation of flood leaves the surface soil degraded and impacts significantly on the environment and livelihood of the people.

It is saddening that extant environmental laws and policies can curb this life-threatening social problem but have been neglected, increasing the devastating nature of the flood. It is significant that the failures of environmental laws and policies, especially in implementation, have exacerbated flood and erosion, as witnessed in Rivers State, while defeating the

global mandate on climate change. The failures to implement this law and policies have shown a lack of political will by state actors due to corruption and bad leadership. It has become imperative to review these problems by all stakeholders and demonstrate the will to do the needful.

Recommendations

1. The relevant state actors need to demonstrate political will by providing the resources and facilities that facilitate the sustainable implementation of environmental laws and policies to curb server flooding and erosion in River State.
2. Environmental Civil Society Organizations and advocates need to intensify advocacy and sensitization interventions to engage all

relevant stakeholders for speedy implementation of the environmental laws and policies in River state in line with good international practices

3. The government agencies responsibility for disaster and emergency responses should provide palliatives for individuals and communities that have been devastated by flood and erosion.

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