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Environmental Policies, Agencies and Flood Management in Selected States in Nigeria (2005-2021): The Gaps and The Challenges

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Abstract. Floods have affected the lives of people across the world. Nigeria is not an exception. It has resulted in the loss of lives, damage to infrastructure, agricultural produce and disruption of social life. In addressing the problem, Government has formulated and implemented different policies, set up various agencies to mitigate the devastating effects in the last fifteen years, In spite of these efforts, the problem of flooding continues, unabated in Nigeria. Hence this study investigated the influence of government environmental policies and government agencies on flood management in Nigeria. Mixed method design was adopted for the study. The population of the study was 990. Taro Yamani formulae was used to determine the sample size of 285. Purposive and stratified sampling was adopted in the location of the respondent. Questionnaire and interview guides were used for the study. Data collected were analyzed using descriptive and inferential statistics while the qualitative data were content analyzed. The study found that the flood management mechanisms of agencies had no significant effect on flood management (Adj. R^2 = 0.011:F (1,258) = 2.737, P>0.05). The content analysis revealed that government environmental policies in the study area in the last 15 years have not been adequately implemented. The study recommended that the Federal Government should review government environmental policies in the study areas. The study also recommended the setting up of a new dedicated and centralized agency for effective flood risk management in Nigeria.

Keywords: Flood Management, Environmental policy, flood disasters, government agencies.

1. Introduction

Globally, flood disasters have led to considerable loss of lives and increasing economic and social losses. From China to Mexico, USA, Indonesia, India, Canada and the UK among others, floods have assumed threatening dimensions. In August 2021 flash floods caused massive destruction in Tennessee USA, 21 people were killed and several houses were swept away several people were declared missing. The horrifying flood swept away a set of 7 months old twins from their fathers' arms (CNN NEWS 2021). In May 2016 floods driven by torrential rains claimed the lives of hundreds of people in China, while thousands more were killed by landslides caused by floods (Zhang et al, 2016). In 2018, Korale, a State in India was devastated by floods, more than 350 persons died while over one million people were evacuated to over 4000 relief camps (Izah 2018) African nations have not been excluded from the worldwide flood experience. Flooding remains one of the key reasons preventing Africa's population from escaping poverty (Musa & Shuaibu 2019). According to the centre for Research on the Epidermiology of Disasters (CRED 2019) more than 15,000 people died during 2000 to 2009 as a result of flooding. From 1950 to 2009 the number of people killed by floods in Africa grew by a factor of ten. Over a million people were displaced by floods in 2007 and 2.5 million were displaced in 2009.

In Nigeria flooding is a typical occurrence on yearly basis and its destructive potentials are considerable. Cities in Nigeria have had several major floodings since the early 1950's with both coastal and river floods. These floods are mostly caused by the seasonal interruption of major rivers and the fact that water can get over their barriers, both natural and man-made, when it rains (Chukwu et al 2018).

Flooding has caused damage to agriculture, livelihood systems, household properties, public utilities and infrastructure amounting to billions of naira each year (Olalekan 2018). Several Nigerian states are seriously experiencing flood disasters caused by precipitation which is always associated with climate change (Adeniji 2018). Some of the States most seriously affected by flooding in Nigeria are Bayelsa, Kogi, Lagos, Taraba, Delta, Edo, Rivers, Anambra, Plateau and Niger states. In the South west and Delta states of Nigeria flooding is also recurrent with severe impacts. The communities located at the tributaries of the Niger are also flood- prone (Adekola & Lamond 2018)

According to Obeta (2015) farmlands in Zamfara were submerged in 2003 due to heavy floods caused by a dam collapse. Akinloye (2018) confirms that excessive rains in Zamfara state resulted in the displacement of 12,300 persons during the same year. The rains ruined farmlands, inundated structures and damaged farmlands. A major flood in Nigeria was the Kano state flood of 2006, which killed hundreds of people and cost the country millions of dollars (Okoye 2019). The floods of 2012 was adjudged the worst flood in Nigeria in 40 years. The floods affected 30 of the 36 states in the country. An estimated total of 7 million people were affected by the floods. 368 deaths were reported while more than 2.1 million people were forced to flee their homes. The floods caused 2.6 billion Naira in losses and damages (Okoye 2019). In 2019 devastating flood disasters occurred in Nigeria. According to NEMA reports (2020), the states affected by the floods were Cross River, Kogi, Adamawa, Anambra, Taraba, Bayelsa, Rivers, Niger, Borno, Yobee, Benue and Delta states. The floods displaced 141,400 people. Over 108 deaths and 192 injuries were recorded. Again in 2021, flood disasters killed 68 people and affected 35 states and 520 Local governments in Nigeria (NEMA reports 2021)

This study covered three (3) states in Nigeria. These are Bayelsa in south south zone, Kogi in the North Central zone and Lagos in the south west zone. The states were selected for the study because of the preponderance, magnitude and frequency of flood disasters in the states. The study covered environmental policies on flood management formulated and implemented from 2005 to 2021 in Nigeria. It also covered selected agencies responsible for policy making and implementation on flood management in the study areas. The study focused on National Emergency Management Agency the flagship agency for flood management in Nigeria.

1.1 Statement of the Problem

In addressing flood disasters, different policies and disaster management measures have been formulated and implemented by the Federal Government of Nigeria. Two of these major policies include; the National Erosion and Flood Control Policy (2005) and the National policy on environmental conservation (2006). Government agencies like National Emergency Management Agency (NEMA), National Orientation Agency (NOA) and National Environmental Standards Regulation Agency (NESRA) have all been involved in activities of flood management in Nigeria. The nodal agency responsible for flood management in Nigeria is NEMA. The agency has the formulation goal of ensuring a dynamic, effective and efficient flood disaster/emergency management in Nigeria.

In spite of these policies and the management and control of flood disasters by different government agencies, flooding continues unabated with disastrous consequences in Nigeria. In 2019, 45,000 farmers were directly displaced by flood disasters and 29 deaths were recorded across 8 Local Governments of Lagos State (NEMA 2020). In August 2021 in Bayelsa state, several homes, farmlands, schools and church were submerged in 6 local government areas of the state with 250,000 people displaced (NEMA report 2021). In Kogi state, flooding has continued on yearly basis with devastating effects, Following the Presidential approval of a designated national climate change strategy in August 2021, the Federal Ministry of Environment announced that a national policy that will address all of the difficulties posed by climate change and climate vulnerability in the country was underway. Details of the policy are still been awaited. This study therefore investigated the effect of government environmental policies and activities of its agencies on flood management in Bayelsa, Kogi and Lagos states of Nigeria.

1.2 Objectives of the Study

The main objective of the study is to examine the influence of government environmental policies and the activities of its agencies on flood management in Nigeria. The specific objectives are to:

- Evaluate the effectiveness of government environment policies on flood management in the study areas.
- Examine the effect of the activities of government agencies activities on flood management in the study areas.

1.3 Research Questions:

- How effective are government environmental policies that have been formulated and implemented in the study areas?
- What has been the effect of government agencies activities on flood management in the study areas?

1.4 Hypothesis

H1 Government agencies activities have no significant effect on Flood management.

2. Conceptual Clarifications

The concepts that will be reviewed in this work are floods and environmental policy.

2.1 Floods

The existing literature on flooding makes available a multiplicity of the overlapping definition of the concept, the types of a flood, its causes, and its impact. Zom (2018) defines flooding as the presence of water in normally dry locations that considerably disturbs and interferes with human and societal activity. Flooding is defined by the European Commission as the temporary covering of land by water that was not previously covered by water. Similarly, Olajuyigbe et al (2006) describe flood as large volume water covering an area that is typically dry or as the overflood of a large body of water over terrains that is not normally submerged. That demonstrates that floods occur when an excessive amount of water moves across the previously dry ground (Demessie 2007), Cirella and Iyalomhe (2018) view flooding as a natural by-product of stream movement in a constantly changing environment from the point of new of its devastating effects, Adelekan (2016) described the flooding as a natural disaster comparable to drought and desertification that happens as a result of a severe hydrological event while the above researchers hold divergent opinions on what flood and flooding are they all agree on one thing: a flood is a vast amount of water inundating previously dry territory.

On causal factors of flooding Ojo and Adejuyigbe (2017) state that the factors that lead to the occurrence of flooding in Nigeria are anthropogenic in nature and according to the world Metrological Organisation (2008) the factors causing flooding include hydrological extremes and other human factors. Various studies have implicated the poor attitude of many Nigerians to waste disposals as a major cause of flooding in the study areas (Oladokun & Proverbs 2016, Oluwaseyi 2019, Ojo & Adejuyigbe 2017, Musa & Shaibu 2019, Olukanmi, Adebayo and Terube 2014). In their own study, Offiong, Atu, Njar & Amreyon (2009) found that poor drainage system have seriously caused flooding problems in developing countries including Nigeria. Salami, Van Meding and Griggins (2017) stated that unregulated urbanization resulting from rapid population increase coupled with the issue of unplanned development has resulted in inadequate spatial planning. This has presented itself in the form of flooding catastrophes.

2.2 Policy

According to Hallsworth, Parker, and Rutter (2011), policies are discrete interventions designed to alleviate specific problems, the effects of which can be quantified and evaluated, while acknowledging that the effects of these deliberate interventions may be complex, sometimes wide-ranging, and unintended. Given the gravity of the issues that governments often address, they note that it is improbable that a policy will have both accountable and observable effects.

Hallsworth, Parker, and Rutter (2019), said that the aim of policy is to accomplish broad strategic objectives, noting that the quality of policy formulation is inextricably linked to the government's overall goodwill and that of the individual country. When policies fail, large monetary and associated expenses are typically incurred. Public opinion may have a variety of influences on how policies are developed or perceived. Indeed, it has been asserted that public opinion possesses the capacity to alter the course of history (Hobley 2012**).**

3. Theoretical Framework

The Theoretical Framework adopted for this study is the social action theory of Max Weber (1864 – 1920). The social action theory is preoccupied with the path, processes, and consequences of human actions in society as well as with the causes and meaning. Weber distinguishes four primary categories of social actions. The man may participate in Max Weber's social action theory is helpful in clarifying the study's substantive concerns. Among Weber's categorises and types of social activity, the last rational action is the most pertinent to their study. The acts or inactions of both government and people in society frequently result in unintended effects of floods that are detrimental to the long-term viability of civilization.

In other words, it would be stressed that government and individual acts and/or inactions contribute to the causes and effects of floods. Some examples of poor behaviour on the part of individuals in society include depositing waste in the urban drainage system in the mistaken notion that floods will wash it away. People's disproportionate proclivity for indiscriminately disposing of debris is always significant; it may result in floods, which is detrimental to society. Policy actions of government are necessary instruments for change in Society. Also, the construction of adequate drainages system is a desirable action ofgovernment but these are in shortfall while most of the available drainages are poorly constructed. Consequently, there are regular overflow of water especially during rainy seasons leading to flooding in major cities in Nigeria. Other areas of government passivity that directly cause floods are the governmental agencies' incapacity to develop an effective waste management system and affordable housing in the society.

4. Environmental Policies in Nigeria

The NEFCP was developed in March 2005. The policy thrust is directed at ensuring that coordinated and methodical actions are implemented in the management of flood and erosion problems in the country. It was argued that before 2005, efforts at controlling floods and erosion in Nigeria appeared discontinuous, very uncoordinated, and seriously under-funded leading to unsatisfactory results (Wahab, 2017). Among other things, Obasanjo (2005), in his preface to the policy, stated that "the national policy on flood and erosion control is intended to coordinate and promote programs that will eventually lead to the minimization of soil erosion" promote programs that will eventually lead to the minimization flood hazards." Oladoku and Proverbs (2016) stated that the National Erosion and Flood Control Policy has as its purpose the preservation of natural resources, conservation of productive land and the prevention of negative consequences from floods and landslides.

The policy provided that land use laws and regulations be formulated and reviewed. However, according to Arokoya and Ibam (2014), it is not just the review and formulation of land use regulations and laws, but the strict enforcement and adherence to these laws that will engender achievement of government objectives. The enforcement of land use laws and regulations have been undermined in Nigeria through the instrumentality of the State bureaucracy. Public and private buildings have been constructed without regard to government environmental regulations. Some projects are sometimes built without adherence to existing environmental guidelines because some top government officials get percentages as kickbacks from contracting firms. The continuous indulgence of Nigerians in unfriendly environmental practices like deforestation, bush burning, overgrazing and indiscriminate waste disposal is an attestation to their abysmal ignorance. It is obvious that 17years after the formulation and implementation of the National Erosion and Flood Control Policy, many Nigerians remain ignorant of the consequences of their human activities on the environment.

According to Wahab (2017), the National Erosion and Flood Policy has shown to be ineffective in restoring environmental security, contrary to predictions. The terrible flood disaster of 2012 was caused not just by severe rainfall, but also by human activities, which contributed to its devastation. However, the NEFCP was unable to control these human activities, even if it wanted to, in order to prevent and ameliorate the devastation caused by the floods in Nigeria in 2012. Despite the fact that the Policy included raising awareness as one of its aims and placed a focus on a participatory approach at the grassroots level, it has failed to rein in the excesses of residents when it comes to the environment. People in Nigeria continue to engage in unwholesome practises such as the construction of refuge dumps and the blocking of waterways by individuals, corporate organisations, and even government agencies, which demonstrates that the majority of Nigerians are completely unaware of the consequences of their actions on the environment Wahab(2017).

The absence of, or complete disregard for, applicable planning rules and environmental impact assessment (EIA) during building operations demonstrates the National Flood Control Policy’s failure some years after it was enacted. Clearly, suitable measures have not been done to achieve the fundamental goals of Nigeria’s National Policy on Erosion and Flood Control. The policy appears to be a piece of paper that has not even given full power it requires to mitigate terrible effects of flood erosion in Nigeria (Adebimpe, 2017).

4.1 The National Policy on Environmental Conservation (2006)

The National Policy on Environmental Conservation was initially formulated in 1989 in response to the Federal Environmental Protection Agency's (FEPA) regulation No. 59 of 1988 and was amended in 2006.

The decree establishes the legislative foundation for environmental preservation, natural resource conservation, and sustainable developmentstrategies.. The National Policy on Environmental Conservation intends to include biological diversity issues into national planning, policy, and decision-making, as well as to conserve and enhance the nation's biological variety via sustainable usage (Adebimpe, 2017). The primary objective of this environment policy, which was amended in 2006, is to ensure environmental protection and natural resource conservation for sustainable development. Its strategic purpose is to coordinate environmental conservation and development that is sustainable. The strategic objectives will be accomplished by ensuring a healthy and sustainable environment; promoting an understanding of the critical connections between environmental, social, and economic development issues; encouraging individual and community participation in environmental improvement; raising public awareness and fostering a national culture of environmental stewardship.

Despite the policy's ambitious goals, the country has continued to endure an increasing degree of catastrophe risk. The administration has failed to compile comprehensive maps of hazards and vulnerability assessments for the country. Additionally, the national catastrophe framework and strategy have not been implemented at the national and state levels. This has harmed the nation's capabilities for properly identifying, monitoring, and assessing flood risks (Adebimpe, 2017).

4.2 Agencies for Flood Management in Nigeria

Institutional policy approach to flood management in Nigeria entails the setting up of key institutions for tackling flood. This entails the setting up of disaster management agencies, departments and ministries with responsibility for flood management. The major agencies that have been set up include National Emergency Management Agency (NEMA), National Environmental Standards and Regulation Enforcement Agency (NESREA), and the National Orientation Agency (NOA).

4.3 National Emergency Management Agency (NEMA)

The National Emergency Management Agency (NEMA) is the government's premier flood disaster management institution. It is charged with the responsibility of formulating policies, assessing natural and man-made disasters, providing mitigation for disaster-related activities, coordinating relief programmes for victims of such disasters, and identifying flood-prone areas for the purpose of developing flood mitigation and prevention measures (Maigari,2009).

Deriving from its formulation goals, NEMA was to superintend emergency/disaster management through formulation of policies, coordination and monitoring of other stakeholders and agencies (NEMA, 1999). According to the Act establishing NEMA, the Agency was designed to take both horizontal and vertical oversight of the -activities of Federal Government agencies and parastatals directly and indirectly engaged in emergency management activities in Nigeria. The vertical aspect of NEMA's function focuses on the stakeholders/agencies from the other levels of government, especially the State and Local Emergency Management Agencies/Committees. Invariably, disasters/emergency management is patterned after Nigeria's federal political structure.

5. Methodology

To generate relevant data for this study, a mixed research design was adopted. The research collected data using quantitative and qualitative methods. The qualitative data were collected through survey methods while the quantitative data were collected through interviews Data were also collected through documentary methods, Journals, government gazettes and internet sources. Primary and secondary sources were used in data collection. Purposeful and stratified were used in the administration of questionnaires to 285 management staff of ministries of environment and emergency management agencies in Bayelsa, Kogi and Lagos States. Taro Yamani formular was used to determine the sample size of 285 out of the population of 990 across the three selected states. A total of 12 government and agency officials and 16 community leaders and victims of flood disasters were interviewed. Tayo Yamani formulae was used to determine the sample size of 285 out of the study population of 990 across the 3 selected states.
The method of data analysis was both descriptive and inferential statistics. The descriptive statistics were analysed using simple percentage count while the inferential statistic was analysed using regression analytical tool with the aid of SPSS software. In addition, the data generated from interviews were analysed using content analytical method.

6. Data Presentation, Analysis and Discussion of Findings

This section of the study covers the presentation of data from the respondents through the questionnaires and interviews. The data gathered are analyzed in tables using descriptive statistics of simple percentages mean and standard deviation. The section also tested one hypothesis using simple regression statistics. Discussion of findings formed the last section.

Re-statement of objective One:

Evaluate the effectiveness of Government Environmental Policies/strategies of flood Management in the study Area.

Government Policies/Strategies for Flood Management

S/N	ITEM	CA(5)	SA(4)	SD(3)	CD(2)	N(1)	M	SD	REM
		F(%)	F(%)	F(%)	F(%)	F(%)			
1	The National Erosion and Flood Control Policy and the National Policy on Environmental Conservation have been successful in curbing Flood Disasters in Nigeria	18(6.9)	81(31.2)	77(29.6)	39(15.0)	45(17.3)	2.85	1.212	
2	Government Environmental Policy have been able to address the problem of climate change and other human causes of flooding in the study area.	68(26.2)	161(61.9)	26(10.0)	4(1.5)	1(0.4)	4.01	0.898	Accept
3	Agencies of government have put urban planning guidelines, development and building control policies in place to ensure that no building are erected in flood plains and flood risk areas.	78(30.1)	148(56.9)	17(6.5)	17(6.5)		3.97	1.074	Accept
4	Government strictly enforces regulations barring buildings residing in flood prone areas and demolish such buildings to avert flood disasters.	62(23.8)	149(57.4)	26(10)	18(6.9)	5(1.9)	3.81	1.118	Accept
5	Government is actively involved in provision of proper waste management facilities	103(39.6)	145(55.8)	11(4.2)	1(0.4)		4.30	0.716	Accept
6	Relevant agencies normally engage in desilting of drains and construction of drains where needed	77(29.6)	168(64.6)	14(5.4)	1(0.4)		4.18	0.719	Accept
7	Government adopts non-structural measures like education of citizens, institutional readiness and enhancing citizens coping capacity in flood risk management.	154(59.2)	84(32.3)	7(2.7)	14(5.1)	1(0.4)	4.37	1.026	Accept

In the Table, minority of the respondents with 6.9% and 31.3% completely and somehow agreed that The National Erosion and Flood Control Policy and the National Policy on Environmental Conservation have been successful in curbing flood disasters in Nigeria. While 29.6%, 15.0% and 17.3% majority somehow disagreed, completely disagreed and neutral about the statement. On the average, the respondent completely disagreed in this case with a mean of 2.85 and a standard deviation of 1.212. Furthermore, a majority of the respondents with 26.2% and 61.9% completely agreed and somehow agreed respectively that. Government Environmental Policies have been able to address the problem of climate change and other human causes of flooding the study areas. However, 10.0%, 1.5% and 0.4% minority of the respondents responded otherwise. In sum, the respondents, with a mean of 4.01 and a standard deviation of 0.898, somehow agreed that relevant agencies of government usually issue early warning notices/advice of impending flood events to residents of flood prone communities to relocate before flood events.

In another dimension, majority of the respondents with 30.1% and 56.9% completely agreed and somehow agreed with the assertion that agencies of government have put urban planning guidelines, development and building control policies in place to ensure that no building are erected in flood plains and flood risk areas while 6.5% and 6.5% responded otherwise. Averagely, with a mean of 3.97 and standard deviation of 1.074, the respondents somehow agreed to the statement. Also, while majority of the respondents completely agreed and somehow agreed respectively with 23.8% and 57.4% respectively that Government strictly enforces regulations barring buildings residing in flood prone areas and demolish such buildings to avert flood disasters, 10.0%, 6.9% and 1.9% minority of the respondents respond otherwise. Summarily, with average mean of 3.81 and a standard deviation of 1.118, the respondents somehow agree with the forgoing statement.

In addition, the majority of the respondent equally agreed completely and somehow with 39.6% and 55.8% respectively that Government is actively involved in provision of proper waste management facilities while a minority of 4.2% and 0.4% respondents thought otherwise. On the average, respondents somehow agreed, with a mean of 4.30 and a standard deviation of 0.716, that Government is actively involved in provision of proper waste management facilities.

Furthermore, while 29.6% and 64.6% majority of the respondents completely agreed and somehow agreed respectively that relevant agencies normally engage in desilting of drains and construction of drains where needed, 5.4% and 0.1% minority of the respondents somehow and completely disagreed that relevant agencies normally engage in desilting of drains and construction of drains where needed. Thus, the mean value of 4.18 and 0.719 revealed that the respondent somehow agreed with the statement.

Also, the statement that Government adopts non-structural measures like education of citizens, institutional readiness and enhancing citizens coping capacity in flood risk management was attested to with 59.2% and 32.3% majority of the respondents who completely agreed and somehow agreed respectively. However, 2.7%, 5.1% and 0.1% of the respondents somehow disagreed, completely disagreed and neutral respectively to the statement. Thus, the values of the mean and standard deviation superlatively affirmed that the respondents somehow agreed to this statement.
The implication of the results above is that government policies and strategies for flood risk management have not been successful in preventing and managing flood disasters in Nigeria.

Restatement of Objective Two
Examine the effect of government agencies activities on Flood Management in the Study Area

Government Agencies Activities.

SN	ITEM	CA(5)	SA(4)	SD(3)	CD(2)	N(1)	M	SD	REM
		F(%)	F(%)	F(%)	F(%)	F(%)			
1	Government adequately trains and equip management and rescue teams for flood disaster management.	65(25.0)	133(51.2)	23(8.8)	39(15.0)		3.62	1.349	Accept
2	Adequate evacuation and relocation plans are usually put in place and enforced by relevant agencies of government after flood disasters.	93(35.8)	106(40.8)	19(7.2)	42(16.2)		3.73	1.427	Accept
3	Government actively provides adequate relief i.e. food, water, clothing, shelter for flood disaster victims post disaster.	123(473)	80(30.8)	11(4.2)	46(17.7)		3.86	1.491	Accept
4	There here been lack of proper and effective coordination between the major stakeholders (NEMA, SEMA and LEMA) in the conduct of flood risk management activities in Nigeria	161(61.9)	97(37.3)	1(0.4)	1(0.4)		4.60	0.557	Accept
5	The failure to operationalise the National Disaster Management Framework (NDMF) which was adopted by Nigeria in 2010 has affected the nation's capacity to prepare, respond and recover from disasters.	159(61.2)	99(38.1)	2(0.7)			4.60	0.537	Accept
6	Despite its appreciable achievements, NEMA the modal disaster management agency in Nigeria has not succeeded addressing flooding problems holistically and permanently in Nigeria.	160(61.5)	92(35.4)	2(0.8)	6(2.3)		4.53	0.758	Accept
Aggregate							4.58	0,61	

In Table 5.7, majority of the respondents completely agreed and somehow agreed with 61.9% and 37.3% respectively that there has been lack of proper and effective coordination between the major

stakeholders (NEMA, SEMA and LEMA) in the conduct of flood risk management activities in Nigeria. However, 0.4% and 0.4% of the respondents respectively affirmed somehow disagree and complete disagree. On the average, with a mean of 4.60 and a standard deviation of 0.557, the responded completely agreed with the statement. Furthermore, majority of the respondents with 61.2% and 38.1% completely agreed and somehow agreed respectively with the statement that the failure to operationalise the National Disaster Management Framework (NDMF) which was adopted by Nigeria in 2010 has affected the nation's capacity to prepare ,respond and recover from disasters. However, 0.2% of the respondent completely disagreed. Thus, the respondents averagely completely agreed to the above assertion with a mean of 4.60 and a standard deviation of 0.537. Moreover, 61.5% and 35.4% majority of the respondents completely and somehow agreed respectively to the statement that despite its appreciable achievements, NEMA the modal disaster management agency in Nigeria has not succeeded addressing flooding problems holistically and permanently in Nigeria. Nevertheless, minority of the respondents with 0.8% and 2.3% somehow and completely disagreed with the same statement. However, the value of mean and that of the standard deviation which are 4.53 and 0.75 respectively, affirmed that the respondents completely agreed with the statement.

The implication of the forgoing result is that government agencies have not been successful in post disaster activities like adequate evacuation plan and provision of adequate relief items for flood disaster victims. It revealed that effective coordination is lacking among the major stake-holders in the federal, state and local government. It also revealed that NEMA, the primary agency for flood risk management in Nigeria have not performed its establishment roles creditably.

Findings from Transcribed Interview Sessions According to Research Questions

How effective are government environmental policies that have been formulated and implemented in the study areas?

Interviewees gave varied responses in respect of how adequate and effective the policies and strategies of government on flood management are in the study areas. In an interview conducted with a key official in the Planning Department of the Ministry of Environment, Lagos State, he asserted that government strategies in the State have been largely successful. He stated that the strategies identified to be implemented to manage flood by the state government are documented in the 2012 climate policy which was revised in 2020 and the Lagos model city Masterplan produced in 2011. He said the ongoing implementation of the climate policy has led to several structural and non-structural flood control activities like the development of a flood and storm warning system including a Geographical Information (G.I.S) based storm and flood simulation system, creation of buffer zones from the shovelines to accommodate anticipated sea level rise, climate profiling of existing and new infrastructure against anticipated climate change impacts such as flood and sea level rise and storm surges. Other measures the official said are being implemented are building capacity of local communities to protect themselves against storm surges and sea level rise and raising public awareness of residing in low lying areas and provision of incentives towards relocating to safer alternatives places. He informed that notices are usually issued to dwellers of flood prone communities to relocate.

On waste management and de-silting of drains in the study areas, another official in the Ministry of Environment Lagos State stated during an interview with him that the state government has put in place an effective, proactive and resourceful waste management system in the state through Lagos waste management Agency (LAWMA) to avoid droppage of wastes in gutters and flood paths. He said since 2019, the government introduced the construction, demolition and disaster waste management (CDDW) initiative to prevent, minimize, re-use, recycle, recover and dispose waste. Also as part of efforts to ensure a flood free Lagos he said extensive dredging and desilting projects are being carried out in major drain channels in the state. The Director averred that massive desilting of drains, clearing of culverts and identified spots in the state are ongoing. He said rehabilitation works have been carried out in 44 primary channels in the state while work is ongoing on 222 secondary channels.

In Kogi State, the Director of climate change in the Ministry of Environment informed that the government in a bid to mitigate the effect of flooding in the state has been pursuing a deliberate strategy of expansion and desilting of drainage facilities in Lokoja, Ibaji, Bassa, Ofu and Igalamela Local Governments in the State.

In the contrary opinions expressed by community leaders and victims of flood disasters in the study areas, government policies and strategies for flood

management have been inadequate. On expansion of drainage facility it was observed in Lagos state that some drainage projects embarked upon by the government have not been completed three years after commencement. Also it was pointed out that in many cases when the government embarks on cleaning of primary and secondary channels, the debris found their way back into the channels because of delayed evacuation on the part of the contractors. Also the drainages are usually left uncovered after the removal of the debris leading to early collapse of such channels and most of the time a reduction in vehicular right of way. On relocation notices usually issued by government, some of those interviewed averred that most of the time adequate evacuation and relocation plans are not put in place. Usually, where to relocate and nature of support government plans to give are not stated, hence people in the flood plains always neglect or ignore government announcements and make their own plans to defend their belongings and homes from impending floods. Moreso some demolitions are carried out without any compensation or relocation of the residents.

In Kogi and Bayelsa States, some of the respondents averred that government has failed in respect of public enlightenment programmes on flooding in their communities. They averred that the policy thrust of the present government is on structural measures for combating floods. Also, community development associations and the locals are not deliberately involved in flood risk management efforts.

What are the effects of activities of government agencies in flood management in the study areas?

The interviewees, especially the top officials of NEMA in Lagos and Abuja averred that the agency has done reasonably well in flood disaster management in Nigeria since it was set up in 1999. One top official stated that NEMA has been in the fore front of disaster management and has provided relief and rehabilitation for flood disaster victims creditably in the last 20 years. He stated that there is no State in the country that has not benefitted from NEMA activities in that regard. Another respondent maintained that NEMA has established regional cooperation for disaster management and set up grassroots emergency management vanguards all aimed at effective flood disaster management. He also stated that NEMA has developed a multi-disciplinary epidemic early-warning systems and mechanism and a Geographic Information System (GIS). The GIS is a computer-based application that assists flood risk management activities.

In Kogi State, the Executive Secretary of Kogi State Emergency Management Agency (KOSEMA) averred in an interview that several awareness programmes on flood disasters have been held in the state. He stated that the social media, handbills and town cries have been used in the state to create awareness on flood readiness and notices to relocate from flood prone areas during heavy rains. On provision of adequate reliefs for victims of flood disasters, the Executive Secretary of Bayelsa States Emergency Management Agency (BASEMA) avowed in an interview that adequate measures are taken post flood disasters in the state to provide for and protect lives of victims. He said camps were set up and adequate relief materials provided for all internally displaced persons after the major floods of 2012, 2018 and 2020 in the State. Interviewees in KOSEMA and LASEMA avowed that adequate relief packages, shelter and health care are provided in Kogi and Lagos states post flood disasters.

In contrary opinions, some victims of flood disasters and community leaders interviewed in Bayelsa, Kogi and Lagos States scored government agencies especially National Emergency Management Agency (NEMA) and National Orientation Agency (NOA) very low in their efforts at flood risk management in the study areas. They averred that public enlightenment and awareness in respect of flooding have been very inadequate in the study areas. The interviewees averred that most of the time after flood disaster government was generally aimed at distribution of relief materials to affected victims. A respondent a female trader who was a flood victim in Ibaji LG of Kogi State stated that after the 2020 floods in her area items like mattresses, bags of rice, beans, roofing sheets, clothings and other house hold items were brought and distributed in the area. She reported that there were issues of biases and corruption in the distribution of the materials as some people who were not victims benefited from the materials while several of the flood victims were neglected. She commended the efforts of the state government through Kogi state emergency agency but stated that government measures are only palliates.

On the whole, most respondents in Kogi and Bayelsa view government strategies for flood management as ad hoc, reactionary, inadequate and unsuccessful. However, in Lagos state most respondents indicated that government strategies for flood management have been partly successful.

The study found that government agencies activities do not have significant effects in flood management in Nigeria. NEMA, the nodal agency for flood management in Nigeria has been bogged down with bureaucratic bottleneck and low institutional capacity and has therefore not been able to holistically and permanently addresse flooding problem in Nigeria. From the interviewees, it was found that there was need for the setting up of a dedicated agency for flood management in Nigeria. Also, there was need for involvement of Community Development Associations in flood management efforts.

A suggestion in respect of a dedicated agency for flood management in Nigeria is inagreement with the findings of Nkunnowo et al (2016). Who in their study harped on the need for a centralized institution for FRM in Nigeria. In the UK, the Environmental Agency is the non-departmental government body that has full responsibility for FRM. The success of Flood Risk Mamagement and Flood Risk = Reduction in the Netherlands, USA, China amd the UK have been attributed to the success of their flood management agencies which have strong legal and policy backings to operate effectively (Nkumnowo 2017).

Analysis of Hypothesis

Government agencies' activities have no significanteffect on flood management in Nigeria.

A linear regression analysis was conducted to test the effect of government agencies' activities on flood management in Nigeria. The dependent variable is flood management while the independent variable is government agencies' activities. The test was conducted at significant level of $p<0.05$ such that when p-value was more than the significant level, the model is considered insignificant. The results are outlined in the table below.

Regression results for effect of Government agencies activities on FloodManagement

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.103[a]	0.011	0.007	2.78704

a. Predictors: (Constant), Government Agencies' Activity

ANOVA

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	21.260	1	21.260	2.737	0.099[b]
	Residual	1996.277	257	7.768		
	Total	2017.537	258			

a. Dependent Variable: Flood Management

b. Predictor: (Constant), Government Agencies' Activities

Coefficient

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	31.438	0.882		35.639	0.000
GAACTIVITY	0.074	0.045	0.103	1.654	0.099

a. Dependent Variable: Flood Management

The table revealed the results of the regression analysis on the effect of Government agencies activities on flood management in Nigeria. The Table showed that there is a positive relationship between government agencies' activities and flood management in Nigeria R=0.103. However, the Table equally revealed that government agencies' activities had no significant effect on flood management in Nigeria (R^2 = 0.011; F(1, 258)= 2.737, p>0.05). Based on this result, the study accepted the null hypothesis and concluded that government policies had no significant effect on flood management in Nigeria.

7. Conclusion and Recommendations

The study concluded that governments' environmental policies that have been initiated and implemented in Nigeria from 2005 till date have not been adequate and effective in solving flooding problems in Nigeria. Also, government agencies for flood management have not been effective in the prevention and management of the current flood disasters in Nigeria due to bureaucratic bottlenecks, inadequate funding and low institutional capacity. The institutional policy thrust of the Federal Government which focuses mainly on the structural

approach to FRM has not holistically and permanently addressed flooding problem in Bayelsa, Kogi and Lagos States.

Based on the findings of the study, the study recommends a comprehensive review of government environmental policies and strategies for flood management in Nigeria. Specifically, there is need for the review of the National Erosion and Flood Control Policy (2005).

Secondly, the Federal Government should review the activities of the Nigerian Study Action Team(NEST) with a view to strengthening it further to promote more scientific research and generation of requisite data towards resolving flood disasters and other environmental problems in Nigeria. Universities and research institutions should alsobe given the authority to incorporate studies and programmes in their curricula that are geared toward enhancing flood control and awareness in Nigeria, as well. It seems, at least on the surface, that worldwide research is correlated with progress in the fight against floods.

Finally, there is need for the federal government to set up a new dedicated and centralized agency for flood management in Nigeria. The new agency which should take over the present role of NEMA should be backed with relevant legal and policy frameworks for effective flood risk management in Nigeria. The new agency which should be a non-departmental government body should be adequately funded with at least 50% of the 1% allocated to the ecological fund. Also, the federal government should adopt a deliberate strategy of involvement of non-governmental agencies, Community Development Associations and the locals in flood risk management activities in Nigeria.

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