

Environmental Security and Governance Challenges of Flooding in Lagos State, Nigeria

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Abstract

Environmental security is one of the focal issues of human security. Flooding, which has proven to be a recurrent natural disaster, is a direct case of environmental insecurity. This is a common occurrence in Lagos state, where the security of the population is being challenged by the perennial flooding in the cities. Despite the promulgation and signing of laws and policies on the environment, some of these laws are outrightly ignored, scarcely implemented and most times, grossly inadequate. Structural and infrastructural damages caused by floods are most times not projected for at all by the government and the obvious end result is human insecurity. Von Bertalanffy in (1928) systems theory was adopted as a framework for the study. Using case study research design and mixed method of data collection, 12 key informant interviews (KIIs) and a structured questionnaire was administered to 100 purposively selected respondents in three Local Government, one from each of the senatorial district of the State, while one Local Government was selected based on the proximity to the Lagos lagoon. Governance challenges of flooding in Lagos State include, lack of regular and periodic warnings to people about floods, unlawful and unguided dredging of rivers, the indiscriminate building of houses along drainages among others. This study therefore recommends that proper early warning measures be taken by government for flooding mitigation as well as to prepare the populace ahead of the possible impact. The local government and, the LCDAs, alongside relevant environmental agencies, should support the state government in policy implementation and enforcement of the laws guiding setbacks and dredging.

Keywords: environmental security, environment, flooding, human insecurity, governance

Introduction

Environmental security is one of the focal issues of human security. Environmental security aims to protect people from the short and long-term ravages of nature, man-made threats in nature, and deterioration of the natural environment (Kasperson 2005). There has been increased emphasis placed on expanding the traditional conception of security to include 'non-conventional' threats such as resource scarcity, human rights abuses, outbreaks of infectious diseases, and environmental degradation caused by toxic contamination, ozone depletion, global warming, water pollution, soil degradation and the loss of biodi-

versity (Ullman, 1983; Renner, 1989; Westing, 1989). These discussions, in turn, have stimulated research on examining the specific relationship between environment and security. Suffice to say that flooding, a natural disaster, is a direct case of environmental insecurity.

Flooding has proven to be a re-current natural disaster. Its occurrence is not limited to Africa alone but to other parts of the world (April to July 2006, central and south-eastern Europe Bulgaria, Croatia, Czech Republic, Hungary, Poland, Serbia and Montenegro and Slovakia were hit by seasonal flooding). This being the case, flooding has received international attention hence the summit held in Libreville, Gabon organized by the World Health Organization (WHO) and the United Nations Environment Programme (UNEP). The summit became imperative giving the wanton loss of lives and property which follows each flood incidences. One of such occurred in 2005 when torrential rains and flooding in Bulgaria affected 2 million people, claiming 20 lives and leaving an estimated 10,000 people homeless. Such impacts have become widespread thereby raising human security questions not just in Europe and Asia but, in other parts of the world including Africa.

The past 30 years have witnessed an increase in the incidences of rainfall and flooding in Lagos state. Raji Rasaki in his report to the '*Africa Leadership Forum*' held in Ota, Ogun State, Nigeria on the 24th of October 1988 made allusion to flooding incidences and their causes in Lagos State hence, flooding is not new to Lagos State. However, population explosion and climate change effects, especially regarding the annual onset and cessation of rains, have had an adverse effect on Lagos State with annual rainfall and flooding incidents in the State rising astronomically. The pattern has changed drastically and this has posed a serious challenge to the machinery traditionally burdened with the task to address such incidents, which in this case happens to be the government.

In achieving human security, the government faces challenges which rather than aid human security, drives human insecurity. These challenges range from mono-causal to multi-causal. Laws are made to protect and or limit the effects of likeable floods on the environment by the government. Despite the promulgation and signing of laws and policies on the environment, some of these laws are outrightly ignored, scarcely implemented and most times, grossly inadequate. Structural and infrastructural damages caused by floods are most times not projected for at all by the government and the obvious end result is human insecurity. This study therefore, accessed governmental measures in combating flooding incidence in Lagos State as well as the role of the citizenry and human actions/inactions towards reducing the impact of flood in the state.

Theory and Methodology

Systems theory, proposed by von Bertalanffy in (1928) was adopted as the framework for analysis. The theory provides the ontology of how modern societies have evolved, maintain order and stability, and adapt to new situations and challenges. One common element of all systems is described by Kuhn. Knowing one part of a system enables us to know something about another part (Kuhn, 1974). The theory can therefore be used to conceptualise the shock mechanism in which governance or government handles situations and challenges

This paper employed the case study research design. The mixed method of data collection which comprise the quantitative and qualitative method of data collection was adopted. A structured questionnaire was administered to hundred (100) purposively selected respondents and three Local Governments were purposively selected, one from each of the senatorial districts of the State, while one Local Government was selected based on the proximity to the Lagos lagoon. In total, 20 questionnaires were distributed per Local Government and LCDA of the study. The sample population consist of people who had been affected in one way or the other by the flood incidences and also those with close proximity to the area of occurrence. Key informant interview (KII) was employed as the Qualitative components. A total of 12 KIIs was conducted with purposively selected respondents including Lagos State environmental protection agency (1), Lagos State Ministry of Environment (1); environmental officers in Kosofe (1), Ibeju-lekki (1) Local Government as well as Bariga (1), Agboyi-Ketu (1) and Isolo (1) LCDA were selected based on their knowledge of the subject matter. Chairman of Landlord Associations (5) in purposively selected Communities also formed part of the sample size. Discussions centred on the governance response, both pro-active and reactive, to flooding challenges in Lagos State. Areas were selected based on susceptibility to flood. Similarly, this paper also reviewed government gazettes, government documents and relevant materials related to the discourse. Quantitative data was analysed using simple percentages while qualitative data were content analysed.

Flooding and Governance: A Mutually Exclusive Relationship

'Flooding' refers to the disastrous impact of a flood incident. 1.47 billion people face flood risk Worldwide and about 89% of these live in low- and middle-income countries, and claims over 20,000 lives each year (Rentscheler and Salhab, 2020). According to Kundzewicz et al. (2002), floods contributed to 318,000 fatalities, and over 81 million people were left homeless between 1971 and 1995 alone. Additionally, this phenomenon accounts for one-third of all worldwide disasters (Smith 2001). Flooding, as one of the most frequent and widespread of all environmental hazards and of various types and magnitudes, occur in most

terrestrial portions of the globe, causing huge annual losses in terms of damage and disruption to economic livelihoods, businesses, infrastructure, services, and public health. According to the United Nations statistics division (UN-STATS,2019), long-term data on natural disasters suggest that floods and wind storms (which frequently lead to flooding) have been by far the most common causes of natural disasters worldwide over the past 100 years. According to the *International Federation of Red Cross and Red Crescent Societies*, in the 10 years from 1993 to 2002

flood disasters affected more people across the globe (140 million per year on average) than all the other natural or technological disasters put together (IFRC, 2003).

For ages, humans have settled in floodplains in order to till fertile soils, use the flat terrain for settlements, gain easy and safe access to water, and use rivers for transport (Pavel, 2003). Riverine floods are a natural phenomenon; they have always occurred, and populations have benefitted from them to whatever extent possible (for example, in ancient Egypt the natural annual flooding of the Nile brought much-needed nutrients to irrigated soils). In recent times, humans have become more exposed to flood risk as encroachment into flood plains and lack of flood response plans increase the damage potential.

Normal floods are expected and generally welcomed in many parts of the world as they provide rich soil, water and a means of transport, but flooding at an unexpected scale (damaging flood) and with excessive frequency causes damage to life, livelihoods and the environment. Over the past decades, the pattern of floods across all continents has been changing, becoming more frequent, intense and unpredictable for local communities, particularly as issues of development and poverty have led more people to live in an unsuitable environment and such environments are invariably vulnerable to flooding. *The Fourth Assessment Report* (2007) of the Intergovernmental Panel on Climate Change (IPCC) predicts that 'heavy precipitation events, which are very likely to increase in frequency, will augment flood risk. These floods will affect lives and livelihoods in human settlements in all areas such as coastal zones, river deltas, and mountains. Flooding is also increasing in urban areas, causing severe problems for poor people.

By nature, floods are complex events caused by a range of human vulnerabilities, inappropriate development planning, and climate variability. Floods can be predicted to a reasonable extent, with the exception of flash floods, whose scale and nature are often less certain (ADPC, 2005).

Type	Duration	Characteristic impacts
Predictable, regular Flooding	Up to 3 Months	Blocks access. Damage and displacement of population often relatively low depending on levels of protection.
Increased size of regular flooding	Up to 6 Months	Blocks access to many areas. Greater potential for infrastructure damage, livelihoods impacts, and large displacement of population.
Flash flooding	A few days to weeks	Rapid cresting often with little warning. High velocity flood flows can destroy infrastructure. Population displacement often localized.
Urban flooding	A few days to weeks	Can be rapid-onset, often coming from flash floods in urban rivers or from saturation or blockage of urban drainage systems. Potential for infrastructure damage affecting larger service area. Population displacement often localized.
Coastal flooding	A few days	Often combined with wind damage from storms. Damage and displacement along coastline with extent depending on storm size.
Slow-onset from sustained rainfalls	3-6 months	Blocks access. Depending on season, damage to crops may be significant. Population displacement limited and may be dependent on food security.

Adapted from Mc Cluskey, 2001

The magnitude of disaster is not determined by floodwater alone but also by the pattern of vulnerability in which people live. The lives and livelihoods of many poor people are hardest hit by floods. These people, often already vulnerable to other disasters and stresses such as drought, food insecurity, cyclones and ongoing conflict, are forced to live in hazardous places, building their homes and growing their food on floodplains. Flash floods are characterised by very short periods of time between rainfall and subsequent flooding, which makes effective preparation and response very difficult. The sudden rise in water level, the large volume of water involved, the speed at which the water moves and debris carried along by the flood can be very dangerous, posing a threat to life, property and local infrastructure.

The concept of “governance” is not new to humanity. It is as old as human civilization. Simply put “governance” means the process of decision-making and the process by which decisions are implemented or not implemented. Governance can be used in several contexts such as corporate governance, interna-

tional governance, national governance and local governance (UNESCAP, 2011). Since governance is the process of decision making and the process by which decisions are implemented, an analysis of governance therefore would therefore focus on the formal and informal actors who are involved in decision-making and its implementation as well as the formal and informal structures that have been put in place to arrive at and implement such decision.

As Thomas Weiss (2000) has observed,

Many academics and international practitioners employ 'governance' to connote a complex set of structures and processes, both public and private, while more popular writers tend to use it synonymously with 'government'.

It is therefore not surprising that some scholars do interchange governance and government, though both terms carry different meanings. Some authors, such as Mayntz (2004), have coined the term governance to denote a specific mode of social interaction whose logic differs from that of both markets and governments.

In a more encompassing version, others have used governance to refer to all co-existing forms of collective regulation of social affairs, including the self-regulation of civil society, the co-regulation of public and private actors, and authoritative regulation through government. This broader notion of governance, incorporating steering processes induced by governments and public agencies, is also reflected in James Rosenau and Ernst-Otto Czempiel's understanding of the concept in *Governing Without Governments*, because this formulation assumes that normally governance is closely connected to the activities of government. To them, both terms though similar in a way cannot be interchanged.

Government and governance can be further demystified by the difference in processes. In the words of Gerry Stoker, governance can therefore be conceptualized as that part of human activity concerned with the output of governance.

creating the conditions for ordered rule and collective action. The outputs of governance," Stoker adds, "are not therefore different from those of government. It is rather a matter of a difference in processes. (Stoker, 2014:40)

Among the many definitions of "governance" that exist, the one that appears the most appropriate from the viewpoint of the UNDP is the one that focuses on the management of a nation's affairs.

the exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise

their legal rights, meet their obligations and mediate their differences. (UNDP, 1997:81)

It is of worthy note that UNDP's definition of governance encompasses not just the state, but the private sector and civil society as well. All three are viewed as critical for sustainable human development.

Is governance peculiar to just a locality? Nzongola-Ntalaja (2002) gives a view on the locale in which governance should operate. He defines governance as a very broad concept which operates at every level, such as household, village, municipality, nation, region or globe. He then defines the role of government while agreeing with the World Bank that governments should act as the coordinator for governance. According to him, the role of governments should be to provide a stable political and economic environment. Government policies throughout the world should aim to promote fiscal responsibility, remove barriers to competition, ensure a legal framework for property rights and regulatory oversight, and ensure transparency of the law and policies.

Government can thus be regarded as one of the actors in governance. Other actors involved in governance vary, depending on the level of government that is under discussion. In rural areas or urban communities, for example, other actors may include landlords, associations of peasant farmers, cooperatives, nongovernmental organizations (NGOs), research institutes, religious leaders, finance institutions political parties and the military. In addition to the above actors, media, lobbyists, international donors, multi-national corporations and so on may play a role in decision making or in influencing the decision-making process. All actors other than government and the military are grouped together as part of the "civil society". In some countries, for example, Columbia, in addition to the Civil Society, organized crime syndicates also influence decision-making, particularly in urban areas and at the national level.

Environmental management and flooding incidences in Lagos state

Lagos State was struck by a devastating flood after a heavy downpour that lasted for sixteen hours in the month of July 10, 2011. The massive flooding of the entire Lagos metropolis, southwest of Nigeria, caused by the day-long heavy downpour coupled with the erection of buildings along the channel of rivers, canals and flood ways; dumping of refuse and industrial wastes in drainage channels as well as silting of river channels which blocked the free flow of rain water resulted in loss of lives and the destruction of properties worth millions of Naira in the State. The situation was further worsened by the collapse of a link bridge to areas such as Denro, Akute and Alagbole in the outskirts of Lagos State thereby limiting people movement from the affected areas. The flooding

led to collapse of buildings in areas like Oniwaya area of Agege, Gbagada/Owronshoki, Aboru, and some other areas. The intensity of the flood flow rendered several vehicles immovable and left the entire State in a state of disbelief and comatose. The effect and management of these incident and others which occurred in subsequent years was the focus of the instrument for data collection. The findings are thematically presented below based on Local Government Areas/Local Council Development Areas (LCDA).

a. Ikorodu: Kosofe Local Government & Agboyi-Ketu LCDA

The local authorities in form of the Landlord Associations, Local Chief (Baale) and Community Development Associations (CDA) are the first point of call towards tackling the flood either before or after flood incidences. The post-flooding efforts are aimed at minimizing the cases of human insecurity. This is done through efforts aimed at recovering properties and preventing them from being washed away, rescuing of people trapped by the flood, preventing loss of life as well as moving residents towards a safe haven. In some instances, as part of the post-flooding efforts of the local authorities, boats and canoes are provided to ease transportation challenged brought about by the flood. 95% of the respondents submitted that various transport relief was provided by the Local head/association while 5% of the respondents were not aware of any transport relief but rather, sought personal means of transport out of the flooded areas.

The Local authorities of Ikorodu communities in conjunction with NEMA and the Lagos state government, through its relevant agencies such as Lagos State Emergency Management Authority as well as the State Ministry of Environment, have had a hand in combating the aftermath of flood incidences. Emergency response is deployed to assist the local authorities by the State government and NEMA to carry out search and rescue as well as evacuation and relocation if necessary. The relocation is being done by Lagos State Emergency Management Authority (LASEMA) and those rendered homeless are temporarily relocated to the Lagos State Relief and Resettlement Centre, Agbowa, Ikorodu. According to a respondent, a number of flood victims rendered homeless by the flood prefer to stay away from such resettlement centres for various reasons one of which includes fear of the unknown. This was corroborated with an official of LASEMA who noted that such people end up being destitute and Internally Displaced Persons (IDP's) in communities which are in close proximity to the flooded areas. The Agbowa relief centre is primarily designed to be a temporary centre with a capacity of 500 bed spaces, expandable to 1000 bed spaces, thus, catering for more than these numbers becomes a challenge. The chairman of the landlord association in Agboyi-Ketu LCDA claimed people were forceful-

ly ejected from the camp after 3months. One of such ejections was documented by *Thisday* Newspaper of august 11, 2011.

Another challenge faced by the government in tackling flooding is the manner of emergency response. Search and rescue missions have been hampered by inadequate machineries as well as late distress call. Infrastructural damages incurred during the flood are always in high magnitude and restoring or rehabilitating such structures often becomes a challenge thus, the roads which were damaged by the flood could not be repaired till about 3 months after the flooding incident. Available man power to be deployed by the state government in challenging flooding also becomes a problem here as the flooding incidence often spreads to other parts of the State. This has been similarly the case in subsequent flooding in the area.

Pro-active measures

The State Government advised most of the people living in close proximity to bank of the Oyan River to relocate and took active steps to remove some of those people. 90% of the respondents attested to the information passed across to them through public enlightenment campaign and through mass media advert. Drainages are constructed across the Ikorodu axis to create a throughway for possible flood. The drainages already in place are cleared and barbed wired are seen running the length and breadth of the already constructed drainages to deter people from dumping waste and refuse into the drainage paths. Illegal sand dredgers are being arrested by the special task force on environmental offences while the business is simultaneously shut down as a warning signal to dissuade would be dredgers from dredging the 'Odo-Ogun' river. In the same vein, the government embarked on dredging the river to increase the depth of the river rather than the widening.

It must be noted that the houses situated besides the river bank are still very much in place and people still inhabit such houses with blatant disregard for the warnings given by the government through the mass media and active efforts to move the people i.e. public announcement, radio and television broadcast and more. Ajegunle-Ikorodu, Oke-odo, Maidan-Agility (community adjacent Ajegunle-Ikorodu) and surrounding environment are still highly prone to human Insecurity through flood.

a. Lekki-Ajah (Ibeju-Lekki Local Government)

The government is gearing all efforts at combating the Lekki beach from eroding further the bank and dislodging the embankments put in place. The governor of Lagos State says plans are being hatched to clear the beach of ship-

wrecks and to put more embankments on the beach. Drainages are being constructed in the area. The Lagos State Commissioner for Environment believes the cause of the perennial flooding plaguing the state can be attributed majorly to blocked drainages. Inhabitants indiscriminately drop wastes into the drainage channels which in turns blocks the drainage and prevents rainwater from flowing toward the canal. To this end, warnings are seen placed round the Lekki-Jakande Estate telling residents to desist from indiscriminately dropping refuse into the drainage parts.

Local governance is done through the community development association (CDA). The chairman of the CDA submitted that efforts are been made to clear the drainages before the rains. He says all hands are on deck to prevent a re-occurrence of flood in the area. Governance challenges faced at the local level is mostly challenges of inadequate funds. Residents of the estate are been charged some amount of money by the CDA although, not all the residents' remit. Another challenge being faced is the non-compliance of residents to warnings passed across against the dumping of refuse in the drainage paths. The chairman of the CDA submitted that the government presence needs to be felt more in the aspect of prior warnings before a flood as well as in providing more drainages and efforts should be made in prosecuting those caught throwing waste materials or refuse into the drainages. The chairman posited that all efforts should be geared towards combating the perennial flooding experienced in Lekki-Ajah. The road network in and out of the Jakande estate has almost been eroded by flood. The major challenge been faced by governance in combating flood in this area is the challenge of climate change. The rise in sea level which in turn increases tide in the area is a natural phenomenon and nature cannot be reined rather, it can only be contained. The tide is eating through the shoreline daily and all efforts geared towards safeguarding the shoreline seems to be failing so far.

Inhabitants of Chevron Estate, Mobil and Lekki Phase 1 claimed they are being threatened by the government daily. This they claimed cannot be unconnected with the plan of the government to demolish their houses which the government claims are on drainage paths. A respondent specifically said the new drainage been constructed in the area would need pass through her house in order to be completed and that the government plans to demolish her house. This shows some of the challenges faced by the government in flood management in the state with regards to making decisions, vis-a-vis clearing houses on floodplains for the common good or protecting private citizens from dislodgement.

c. Oworonsoki-Bariga (Bariga LCDA)

Majority of the respondents pointed to blocked drainages as the crux of the problem. Dirt and waste materials are seen round the area blocking various drainages inspected. The gutters are also not left out. 6.7% of the respondents attribute the perennial flooding to the lowlands. The land mass around some areas visited is almost at par with the level of the lagoon at 3 meters below the surrounding area levels. 63.4% of the respondents claim inadequate drainages as the cause of the flooding while 10% claimed the total absence of drainage system altogether.

With the drainages blocked, the rainwater has no throughway hence, acute flooding. The landlord association claimed to have written several letters to the state government for assistance in tackling the flood. Efforts are made to clear the drainages by the association and a lot of efforts are also being deployed to warning the residents against the dumping refuse into the drainages or onto the streets. Efforts are always also being made to provide alternative transport means to people affected by the flood during this period to assist in case of emergencies. The association chairman also says finances pose the biggest problem. Huge finances, according to him, are needed to make any meaningful impact as the flooding problem in Oworonsoki is acute. Another problem identified by the chairman is the flagrant disregard of the warnings by the inhabitants as refuse is still being dumped into the drainages and onto the roads on a daily basis.

The government claims drainages have been constructed at various points in Oworonsoki area and absolves itself from any blame. Also, efforts are made to sensitize the public through radio adverts as well as public enlightenment campaigns. The major challenge is reining the inhabitants from dumping refuse on the drainage paths. Access to the area for quick response during flooding becomes a major challenge to the government and properties as well as lives could have been saved promptly if access to these roads were available during flooding.

It was observed that no relocation has ever occurred in Oworonsoki area of Bariga Local Government area after series of flooding incidents. This cannot be unconnected to the location of the government relief camp at Agbowa, Ikorodu which is quite a distance from Bariga Local Government.

D. Isolo LCDA

The gully's which have become death traps in the inner roads have been covered by various streets associations. Gutters are been constructed and linked so also are the waste materials cleared. The major challenge faced by the local au-

thorities in Ago Palace Way, Okota still remains access to drainage Paths. The drainages are far from most of the streets while houses have been built on the drainage throughway. Redirecting the channel by the residents leaves at minimum one or two houses at serious risk during flooding. The association chairmen believe the major challenge remains linking the available gutters to the drainage system.

The government has expanded the road network of Ago-Palace Way and in the same vein, constructed gutters which leads to the drainages although much still needs to be done to improve drainages and linkages in the inner roads. The challenge faced by the government so far is the destruction of houses which lie on the drainage paths. Most of such houses have been destroyed while the government has been sued to court by a number of house owners.

Conclusion

Emergency management in Nigeria to a large extent has been bedevilled with inconsistent policies. Although organized responses to disasters date back to the early 1900s when the Fire Brigade was in charge of putting out fires, protecting properties, and helping communities respond to disasters, a comprehensive approach to emergency management only began in 1999. Since then, Nigeria's emergency management system has undergone tremendous changes. These include better organizational structure, more funding, curriculum development in emergency management education programs, increased training of emergency personnel, and more collaboration with other countries on emergency management issues. Nevertheless, this burgeoning disaster management system still has a long way to go and faces innumerable challenges, including inconsistent policies, lack of funding for emergency management programs, and multiplication of overlapping agencies among many others. These challenges faced by emergency management deployment have being a bane to governance management of flood incidents in Lagos.

Flooding displaces more people than any other disaster, perhaps because about 20 per cent of the Nigerian population is at risk of flooding (Etuonovbe 2011). Flooding is therefore a perennial problem in Nigeria that consistently causes deaths and displacement of communities. Flooding in Lagos is due to many factors including, but not limited to, the network of lagoons, rivers and oceans that traverse the state (for example Atlantic Ocean and Ogun River), huge amounts of rainfall, river overflows, ocean storms, tidal waves, dam breaks and levee failures as well as poor or absent drainage systems. In some areas where there are drainage systems, illicit dumping of garbage has engendered flooding. Metropolitan Lagos with documented population of more than 22 million people (a keenly disputed fact), is no stranger to flood. The population

of the state as well as its landmass makes the state vulnerable to flood. This same high population figure practically puts the citizens of the state at high risk in the event of wide spread flooding. The population in various part of the State become vulnerable to the effects of flooding which ranges from death, displacement, loss of livelihood and properties and in some cases, ultimately death. Thus, effective management of flooding incidences in the state is sacrosanct to the health, livelihood and vulnerability of the citizens

Recommendations

It is thus recommended that regulatory agencies should employ the use of seasonal forecasts as part of a weather-based early warning system. These should be followed by gearing efforts towards improving the quick response capabilities of the first responders, second responders and all other responders, to emergency situations. It is hence, vital for relevant agencies such as NEMA and LASEMA, to continue to collaborate with other important and relevant stakeholders and strengthen existing ties. Leveraging on the resources, personnel, finance, time and expertise of non-governmental stakeholders will be key to disaster risk reduction in the State during flood incidences.

Furthermore, illegal dredging of rivers and streams in the State for commercial purposes should be strictly regulated or, outrightly outlawed. This should be followed by the creation of buffer zones between the shoreline and the emerging coastal infrastructural developments especially in reclaimed areas. This should be accompanied by periodic clearing of drainage channels and widening of selected channels in the State, most especially in low-lying floodplains.

The LCDAs and LGAs should assist the State government in the periodic inspection of new structures (buildings) in their locale. There should be at least five-metres setback between the buildings and the drainages. This would at least leave the drainage paths free and allow the water to flow effortlessly. Similarly, the Local Government/LCDA should launch some initiatives and sensitization programed to educate the citizens on the dangers of improper disposal of wastes in drainages while empowering Environmental Health Officers (EHO) to do a periodic on-the-spot assessment of homes, markets and other public structures for clogged drainages.

The State Government should ensure that coastal erosion measures are implemented under strict regulations that will ensure that environmental problems would not be transferred to other areas along the coast. A holistic erosion management approach should be employed that will ensure integrated coastal area management. These measures will help to put a check on the perennial flooding in the state, especially in communities close to the ocean and lagoon, and preserve the geographical definition of the State.

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