

# **Flooding And Socio-Economic Development In Ebonyi State, Nigeria**

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## **Abstract**

*Ebonyi state one of the state that make up the South East geopolitical zone is a key producer of food for the nation but suffers drastically agriculturally because of incessant flood occurrence. Flood is a common phenomenon whose occurrence often takes man by surprise. It occurs when water bodies rise into areas above their normal level, spread within the environment and destroy lives and properties. The inhabitants has often suffered negative social economic and environmental consequences each time flood occur as lives are lost, agricultural land destroyed and all social life come to a halt each time it occurs. This work examines the impact of flood on socio-economic development of Ebonyi State as a factor militating against sustainable development. The main objective of this research work was to determine the impact created by the yearly flood, its effect on socio-economic life, the impact of anthropogenic factors and to adopt strategies capable of reducing the impact of flood. It was discovered that the major cause of flooding rest on the impact created by both physical and anthropogenic factors which either occur naturally or through such actions introduced by man. Hence, the research recommends enlightenment, mitigation and control measures such as afforestation, zero tillage in **the affected proper town planning**, improving maintenance culture, proper drainage, proper legislation, and preventing people from building on water ways are highly recommended as strategies to be adopted to avert this menace to educate the people, formation of professional committees and proper legislation to improve and control its occurrence, so that the incessant loose of lives and properties will be minimized.*

**Keyword:** *Flood; Erosion; Environmental Impacts and Sustainable Development.*

## **Introduction**

Flooding according to Adinna (2001) occurs when water bodies rise into areas above their normal levels. According to him, all water bodies, be it stagnant or flowing, have their containing valleys. River flow in channels and ocean have their basins. In the same way all natural water bodies have catchment areas defined by water divides or sheds from where they gather water. These water bodies, be it arid or humid, are expected to limit themselves to their channels or containing valleys and collect their water from their specific basins, hence when all these conditions are not there, Rivers flood their banks from time to time and cause damages.

Ebonyi State which is the base of this work slopes drastically from North to South and terminates at the base of Cross-River which separates the state from Cross-River State at the eastern part of the area. Indeed, because of this slope, all other streams including its tributaries connects each other and finally empty into the Cross-River which is the major River of the area. The River most often in the wet period of the season annually overflow its bank and consequently destroy crops, lives and properties. It is this that is referred to as flooding.

Oginyi, Nwankwo, Nweboko and Agada (2013) reported that property worth millions of Naira were destroyed in Abakaliki the Capital City of Ebonyi State by flood. The heavy downpour destroyed property worth millions of naira and prevented human and vehicular movements in Abakaliki metropolis. They also added that the flood which affected, schools, hotels, relaxation centers, churches, shops, and residential houses around Onwe road occurred after about eight hours of heavy downpour. However, in the zone, flooding has become a constant threat which if not checked will endanger the entire residents of the area. To the credit of the state government, it has been striving to put the necessary machineries in motion to checkmate this disturbing trend especially the current impact in place on ecological fund management geared towards tackling flood related cases in the state.

However, the specific objectives of this work are to:

- Determine the negative impacts of flood on the socio-economic development of the state.
- Determine the extent to which the anthropogenic factor contributed to the ugly trend and finally
- Develop some key strategies that could be adopted to mitigate the impact of flooding in the area.

### **Delineation of Concepts**

According to the Draft Report of the vision 20:2020 on Environmental management and sustainable development, flooding results mostly from heavy and high intensity rainfall, coupled with poor watershed management. It notes that human activities such as unplanned rapid urbanization, blockage of river/drainage channels, land clearing from agricultural processes and deforestation may in the end, all contribute to flooding.

Basically, valley or stream beds are always widened as a result of continued water flow along a linear feature. The erosion is both downward, extending the valley into the hillside.

In the earlier stage of stream erosion, the erosion activity is dominantly vertical, the valleys have a typical "V" cross-section and the stream gradient is relatively steep. When the base level is reached, the erosive activity switches to lateral erosion, which widens the valley floor, creates a narrow floodplain. The stream gradient becomes nearly flat, and lateral deposition of sediments becomes important as the stream meanders across the valley floor.

In all stages of stream erosion, by far the most erosion occurs during times of flooding, when more and faster moving water is available to carry a larger sediment load. In such processes, it is not the water alone that erodes; suspended abrasive particles, pebbles and boulders can also act erosively as they traverse a surface (Adinna, 2001).

Within the River channels of Ebonyi State, all the rivers and streams in the area are prone to yearly floods. In the wet periods, bank erosion is prevalent. Bank erosion is the wearing away of the Banks of a stream river and this is distinguished from changes on the bed of the water course which is referred to as scour. Erosion and changes in the form of river banks may be measured by inserting metal rods into surface along the roads at different times, (Ivbijaro, Akintola and Okechukwu, 2006)

Indeed, the environment of Ebonyi State especially its basins has been badly eroded coupled with the yearly floods which often trigger the constancy of such process hence frustrating the entire populace agriculturally, educationally, socially, politically and eventually invading into the peoples culture, value of life and tradition. Erosion which often results from flood per se is the process by which soils and rocks are removed from the earth's surface by natural processes and then water flows down the valley. The eroded sediment is then transported and deposited in other locations.

Ivbijara (2006) stated that the two primary natural production resources that determine agricultural potential are soil and water. Soil is acknowledged as the base for support and nutrition while its water content is basically responsible for facilitating nutrient utilization. But currently due to human activities, soil and water are rarely in adequate supply to maximize agricultural production. Land degradation which involves the physical removal of soil by water and wind, particularly through the process of soil erosion occurs when reduction of both land surface and the quality of the soil with dire consequences on plant growth and the entire ecosystem exist. The various erosive processes and powers of these agents results in sheet, rills, splash and gully erosion. Gully erosion causes channels of various sizes to be developed on bare grounds, roads, farmlands and often results in the destruction of residential areas. Most villages and communities of Ebonyi State have been discovered to suffer flood attendant environmental impact which has negatively affected the socio-economic lives of the people in the State and Nigerians at large, especially the rural populace.

According to the Federal Office of Statistics (FOS. 1999), about 67 million Nigerians representing 65 percent of the population are poor. Most of the poor populace live in the rural areas where they are mostly engaged in agricultural production. Thus, poor agricultural productivity aggravated by flooding and erosion will result in reduced income for the people, increasing their poverty level.

Soil erosion and yearly flooding are likely and primarily linked to the increased poverty level of the people. They will depend more on the goods and services provided by the forests to which they have been associated economically and culturally.

According to Adinna (2001), soil erosion is then the removal of weathered rock from the points of weathering. It is therefore an inevitable natural process in the sedimentary and often in the metamorphic rock formation as well as in the formation of the medium for crop production and plant growth. Hence, in Ebonyi State's immediate environment. Most sedimentary formation which took over the rock structure is basically lowered by soil erosion and floods, and are taken away when the surroundings are choked with water. This is practically noted when these floods have gone and then its negative impact exist on the natural ecosystem.

### **Theoretical Framework**

Flood in history have wrought great calamities to humans, destroying settlements, properties and causing great sufferings. Such destruction of human heritage and civilization should be viewed with concerned development experts. This is because sustainable development is aimed at striving for a better quality of life, not decrease or destroying it. In this concept, the proponent of Environmentalism which seeks to address the over superiority of our surrounding over every other thing should be considered. Flooding, Erosion, Wind disasters, Volcanoes, Earth quakes etc are some of those natural concepts that should be avoided and handled with great concern in view of the Environmentalism proponents.

### **Methodology**

The study adopted a survey research design in which a group of people or items is studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group in the study (Nworgu, 2006). The author equally collected his data by the use of questionnaire and interview from the inhabitant. It also adopted the use of tables and percentage analysis for the presentation and analysis of data collected to actually generate information that will help in the study. 200 respondents was randomly selected for the study by the author through the use of questionnaire designed to guide the study.

### **Result / Discussion**

S/N	Impact of flood in Socio Economic Devpt in Ebonyi State	Yes	No	Sum of Yes & No	% Yes	% No
1	Flood encourages loss of lives and properties to the immediate environment where it occurs.	198	2	200	99	1
2	Flood encourages erosion and lose of farm land to Agriculture	191	9	200	95.5	4.5
3	Flood generally infringe on socio economic development of any locality it ravages	197	3	200	98.5	1.5
4	Flood introduces pests, diseases and other health hazards.	195	5	200	97.5	2.5
5	Flood destroys social infrastructure, tourism sites, markets etc	198	2	200	99	1
	<b>Total</b>	<b>979</b>	<b>21</b>	<b>1000</b>	<b>589.5</b>	<b>10.5</b>

**Source:** Field survey (2016)

However, the table above as generated and analyzed actually show that the impact of flood on socio economic development of Ebonyi State cannot be over emphasized since the percentage yes of the respondents is far greater than the no options.

### **The Environmental Consequences of Floods in the Socio Economic Development of Ebonyi State**

Floods impact on both individual and communities and have social, economic and environmental consequences. The consequences of flood both negative and positive vary

greatly depending on the location and extent of flooding and the vulnerability and value of the natural and constructed environments they affect (Apan, 2010).

Indeed, floods have large social consequences for communities and individuals in Ebonyi State. As most people in the area are well aware of the immediate impacts of flooding include loss of human life, damage to properties, destruction of crops, loss of livestock and deterioration of health conditions owing to water borne diseases. As communication links and infrastructure such as power plants, roads and bridges are damaged and disrupted, some economic activities may come to a standstill, people are forced to leave their homes and normal life is disrupted in all the time flood has occurred in the state.

Similarly disruption to small scale industries that exists in the state has often lead to loss of livelihoods. Damage to infrastructure also causes long-term impacts such as disruption to supplies of clean water; waste water treatment, electricity, transport, communication, "education and health care, loss of livelihoods, reduction in purchasing power and loss of land value in the flood plains always leave the communities economically vulnerable.

Floods also traumatize victims and their families for long period of time. The loss of loved ones has deep impacts, especially on children. Displacement from one's home, loss of prosperity and disruption of business and social affairs can cause continuing stress. For some people in the state, the psychological impacts can be long lasting. Apan, (2010).

Damage to public infrastructures affects a far greater proportion of the population than those whose homes or businesses are directly inundated by the flood. In particular, flood damage to roads, rails and key transport hubs, such as shipping ports, can have significant impact on regional and national economics. Short-term down turns in regional tourism are often experienced after a flooding event, while the impact on tourism infrastructure and time needed to return to full operating capacities may be minimized, images of flood affected areas often lead to cancellations in bookings and a significant reduction in tourist numbers.

Flooding of urban areas as in the case of the 2012 flood disaster in Abakaliki urban metropolis resulted in significant damage to private property, including homes and businesses. Losses occur due to damage to both the structure and contents of buildings. Insurance of the structure and its contents against flooding can reduce the impacts of floods on individuals or companies,

According to Apan, (2010) in many natural systems, floods play an important role in maintaining key ecosystem functions and biodiversity. They link the river with the land surrounding it, recharge ground water system, fill wetlands, increase the connectivity between aquatic habitats, and move both sediment and nutrients around the landscape, and into the marine environment. For many species floods trigger breeding events, migration, and dispersal. These natural systems are resilient to the effects of all but the largest floods. The environmental benefits of flooding can also help the economy through such things as increased fish production, recharge of ground water resources, and maintenance of recreational environments. Areas that have been highly modified by human activity tend to suffer more deleterious effects from flooding. Floods tend to further degrade already degraded systems. However, cycling of sediments and nutrients is essential to a healthy system. Too much sediments and nutrients entering a water way has negative impacts on downstream water quality. Other negative effects include loss of

habitat, dispersal of weed species, the release of pollutants, lower fish production, loss of wetlands function, and loss of recreational areas.

### **Findings**

It is obvious that the economic implication of flooding cannot be over emphasized. The physical damage to our ecosystem including influence of rainfall, temperature, topography etc and anthropogenic factors ie (action of man) as some of the negative impact as a result of the ignorance of the inhabitants.

It was discovered that consequences of flooding range from destruction of the natural environment to claiming of man's scarce resources. However, as flooding washes away the soil and degrades the environment, the inhabitant's livelihood and settlements are affected, which thus obstructs free movements and also reduces the pace of smooth economic activities. In order to assess the extent to which flood imprint has affected the zone especially the 2012 unprecedented flooding which ravaged the people's crops, destroyed lives and properties in the area, Environmental Impact Assessment (EIA) was carried out. Data gotten from the research work field survey revealed great danger if nothing is done to prevent frequent occurrence of flood in the study area.

**Summary, conclusion and Recommendation** In summary, it was revealed that the topography especially at the base of river sides and those residing close to drainage channels face great danger. Flooding has resulted in the depletion of agricultural land via drastic erosion, leaching puling down of cultivated crops, spread of pests and diseases etc which has equally led to low agricultural productivity and consequently reduce the income of the farmers in the area.

Another great imprint is that flooding has led to submerge of several buildings, recreational sites, parks, hotels and indeed most viable places of the metropolis in recent times. This has always rendered the inhabitants homeless as a result of the devastation.

In evaluation, the impact of flood menace on the inhabitants of the area, has confirmed that land degradation and water siltation has often denied the people of good farmland, good water supply sources, and even good products of existing crops. The conservation effects and cost therein are borne by the people through self efforts. External efforts only come in when government infrastructural facilities are affected. The study has made some contributions to knowledge in that; from the study it is understood that flood occurs especially when rainfall persists several hours or days which results in water upsurge and overflow across drainage channels which in turn degrades the environment and cause loss of lives and properties.

Also it is understood from the study that the inhabitants of the degraded environment are deeply concerned as the flood menace always reflects the changes that have taken place in their physical environment.

The study equally revealed that lack of Environmental Impact Assessment (EIA) on flooded areas or flooded prone zones has left the people and government with less information on how to go about it towards ameliorating the inhabitants sufferings when it occur.

The study agreed that the impact of floods has caused the deteriorating physical environment, social disharmony and low exploitation of land resources agriculturally in the study area which left the inhabitant with severe and unrest situation. However, series of recommendations made for consideration and implementation will help to attain a viable sustainable environment.

### **Recommendations**

This study describes how flood menace affects Ebonyi State inhabitants and their livelihood. Indeed it is not too late to address the problems. Having considered the impact of floods in Ebonyi State, the following recommendations were made.

Mitigation and control measures such as afforestation, zero tillage in **the affected proper town planning**, improving maintenance culture, proper drainage, proper legislation, and preventing people from building on water ways are highly recommended as strategies to be adopted to avert this menace.

In addition, there should be mass enlightenment to educate the people more on the impact of flooding and the need to keep away such activities that may encourage flood upsurge occurrence. This is important because people do not know the implication of their various activities on the earth, especially in the rural settings.

There should equally be proper legislation which must regulate people from building on water ways, throwing solid refuses dumps into water ways capable of blocking drainage channels, and enforcing offenders to pay heavy fine when this order is violated, This must be keep, aimed at reducing such actions that could trigger flood menace unnecessarily.

A local flood committee should be set up at village levels to co-ordinate and direct all flood control measure. The committee should be an interdisciplinary one as far as possible which should includes such professionals as environmentalists, engineers, urban and regional planners, etc and relevant leaders in the area. The committee should ensure that all forms of man's activities such a deforestation, cultivating at flood prone sites, bush burning which exposes the soil to free raindrops and subsequent floods be adequately reduced.

### **Conclusion**

The study has examined the impacts of floods to farmers in Ebonyi State and identified that the major causes of flooding in the study area are heavy rains, careless habits of inhabitants through, throwing of solid refuse dumps on water ways leading to drainage blockage, etc. it has come to conclusion that there exists large scale environmental problems resulting from floods where serious damages to the environment are observed.

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