



# **FLOOD CRISIS AND SOCIO-ECONOMIC LIVELIHOOD OF PEOPLE IN OGBARU LOCAL GOVERNMENT OF ANAMBRA STATE, NIGERIA**

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## **Abstract**

*Flood is one of the natural disasters that accounts for over 30% of total losses of lives and property. Flood losses reduce the assets of households, communities and societies through the destruction of crops, infrastructure, buildings and loss of life etc. This study examined the impact of flood crisis on the socio-economic livelihood of people in Nigeria, with a specific focus on Ogbaru local government area of Anambra state. Stratified sampling technique was employed whereby each community in the study area constituted a stratum and 5 communities were randomly selected for data collection. It is a survey research in which questionnaire was used for the data collection. The questionnaire was divided into two sections; the first section inquired the demographic and socio-economic characteristics of respondent, while the second section featured a number of response items of four-Likert scale. Data collected was analyzed using the percentage tables and mean statistics. The study established that flood impacted on people's socio-economic livelihoods and critical aspects such as agriculture, health, education, water, property and assets. It was recommended among other things that government and key stakeholders should assist vulnerable communities/households in order for them to move permanently to higher grounds.*

*Keywords: Public administration, Socio-economic livelihood, Flood, Vulnerability*



## INTRODUCTION

People all over the world often have many factors to contend with in their socio-economic livelihood, among which are natural disasters. The occurrence of natural disasters has been increasing over the years, resulting in loss of life, damage to property and destruction of the environment. The number of people at risk has been growing each year and the majority are in developing countries with high poverty levels making them more vulnerable to disasters. (Living-with- Risk 2006:6). In 2019, cases of flooding have been reported in Nigeria. So many houses and crops were destroyed and causing fatalities. In Jigawa state, 6 people died, 600 people displaced, houses destroyed and farm lands damaged. In Yobe state, 182 houses, in Bauchi, 400 farms were destroyed. In kano, children were swept away by flood. In fact, 10 houses along with shops, community buildings and some lands were destroyed (Flood list, 2019). However, the vision of Nigeria to be among the first top twenty nations with leading economy by the year 2020 may be a mirage, if lives and properties are not safe from the frequent occurrence of flood in the country (Adetunji and Oyeleye, 2013).

Flood menace has become a perennial occurrence in Anambra state and the battle seems endless (Eleweke, 2019). Still fresh in the mind is the 2012 flood crisis which ravaged almost all parts of Nigeria including Anambra State, especially areas like Ogbaru Local Government Area. According to The Child Protection Network of Anambra State (CPNAS) (2013), in the later part of 2012 between the months of July and September, the nation faced an unprecedented flood disaster which resulted to loss of lives and property running into billions of Naira. Several states were affected of which Anambra was one of the most affected States. The disaster affected eight local government areas, with Anambra West and Ogbaru LGAs worst hit. According to the National Emergency Management Agency (NEMA, 2012), the floods were termed as the worst in 40 years and affected an estimated total of seven million people. 10000 homes were fully or partially submerged by the flood with reported cases of death. Leading industries in South of the Onitsha Metropolis were also affected by the flooding resulting to destruction in socio-economic activities. This flood disaster paralyzed economic activities, created social turbulence, and rendered people homeless and this flood situation in Ogbaru has continued to take a turn for worst.

As a result of flood, the entire area is often submerged, thereby creating a huge colony of displaced people and jeopardizing the socio-economic livelihood of people. According to News Agency of Nigeria (2018), the experience while touring the affected communities in Ogbaru Local Government Area recently was shocking and sympathetic following the colossal damages that occurred in the area. The pathetic story about the disaster was that majority of the victims are predominantly farmers and they have lost virtually all they have. All primary, post

primary and tertiary schools in Ogbaru were temporarily closed down in reaction to the flood disaster in the area. The floods caused displacement of people from their usual dwelling places resulting into varying impacts on infrastructure, crops, health, education, environment as well as damage to property.

The government, stake holders and Non -governmental organization has made some efforts by setting up State Emergency Management Agency (SEMA), Internal Displaced Person's Camp (IDPC) located in different areas. Despite these efforts, flood crisis has continued. All the 16 communities were not left out as they were within the water level (Nwoye, 2019). According to chairman Ogbaru local government, Mr Arinze Awogu, the destruction of property, farm, farm produce and livelihood of people were massive. He also said that they are close to where they found themselves in 2012 when water height was 12.84metres and recently, the water height was 11.80m. In 2018, over 375,142 people were affected by flood disaster across 10 local government area of the state. Ogbaru council has the highest number of affected persons with 131,175, followed by Anambra west with 100,775 while Onitsha south has the least with 1,005 people (Eleweke, 2019).

Although an increase in frequency and magnitude of floods, no impact assessment study on the socio-economic livelihoods of the people has been directed to the entire LGA to establish the underlying causes of their vulnerability, as well as identify coping mechanisms employed by the people during floods and strengthen positive coping strategies. Some of the existing literatures have either focused on the entire Anambra State or a particular community in the study area, with little or no attention to vulnerability analysis and coping strategies. In the absence of comprehensive data and information, the measures to cope with floods in the study area seem to have remained ad-hoc. Hence the response to the impact of hazards such as floods has been reactive. There is, therefore, need to establish a proactive as opposed to reactive risk and vulnerability framework for Disaster Reduction and Mitigation in the study area.

Having introduced the study in section one, section two is on literature review, section three is on methodology, section four is on presentation of data and section five on conclusion and recommendation.

## **LITERATURE REVIEW**

### **Theoretical framework**

The theory adopted for this research is the Disaster Risk Reduction (DRR). It is the systematic development and application of policies, strategies and practices to minimize vulnerabilities and disaster risk throughout the society and the adverse impact of hazards within the broad context of sustainable development. The DRR suggests that once we are successful in sustainable

development efforts, we will greatly reduce the risk of disaster. This can be done by developing the flood hazard and risk profiles which can be used to design appropriate measures to manage and mitigate the floods and build peoples adaptation capacity and resilience.

### **Conceptual Literature**

According to oxford dictionary, flood is an over flow of a great body of water over land not usually submerged. flood is also defined as a natural hazard like drought and desertification which occurs as an extreme hydrological (run off) event (Nwafor, 2006).Flood can also be defined as a large volume of water which arrives at and occupy the stream channel and its flood plain in a time too short to prevent damage to economic activities (Abam, 2006).The European Union (EU) flood directive defines a flood as a covering by water of land not normally covered by water. There are many types of flood which are Areal; riverine, coastal, catastrophic and human induced flood. Floods can be caused by unexpected events such as rainfall, dam breakages, earth quake, and volcanic eruption. (Tierney et al 2001)

### **Empirical Literature**

A number of researches and studies have been conducted in respect of different aspects of flooding, ranging from causes, effects, adaptations and disaster risk management generally. For instance, Mwape (2009) examined the impact of floods on the socio-economic status of livelihoods for the people of Sikaunzwe Community in Kazungula District of Zambia. The study established that floods impacted on people's socio-economic livelihoods and critical aspects such as agriculture, health, education, housing, water and sanitation and property and assets. Olajuyigbe, Rotowa and Durojaye (2012) assessed flood hazard in Nigeria with specific focus on factors responsible for perennial flooding in Mile 12 area of Lagos, Nigeria. The result shows that the perennial flooding problem in Mile 12 is as a result of consistent high rainfall and water releases from dam in the neighboring state of Ogun, Nigeria. Other causes of flood in the study area include blockage of drainage channels by refuse and other wastes, narrow river channel sand construction along flood plain. Nkeki, Henah and Ojeh (2013) in their study of Geospatial Techniques for the Assessment and Analysis of Flood Risk along the Niger-Benue Basin in Nigeria, attempted to assess the spatial impact of the October 2012 flooding of the Niger-Benue basin on the surrounding areas. The result of the analysis effectively demonstrated the contribution of geospatial methods in mitigating and monitoring the effect of flooding along the Niger-Benue basin. Adeoti, Olayide and Coster (2010) using structured questionnaire examined the effect of flooding on the fishing households' welfare in Lagos State. Results revealed that rainfall was the dominant climatic factor that had adverse effect on the fishing communities as

81.1% of the respondents experienced loss in income due to flooding. Generally, respondents have higher net income during high season when there is less likelihood of flooding than at low season. This implies that during the high season when the volume of water is low, fish catch is high. The regression analysis shows that household size, membership of association, access to credit and proportion of loss due to flooding were the significant factors explaining fishers' welfare in the study area. The study revealed that fishers employed different coping strategies such as moving permanently or relocating temporarily to another fishing site where there is no flooding to mitigate loss of income as a result of flooding.

Ogini and Adebamowo (2013) evaluated the socio-cultural effects of climate change on vulnerable Africa, with specific focus on the need for urgent action towards adaptation in Nigeria. The researchers found that though climate change may be a relatively new term in these parts, rural men and women are those who are resource dependent and are those who see the changes first hand and know the problems that occur as a result of these changes. Efobi and Anierobi (2013) examined the impact of flooding on the Omambala and other riverine areas with a view to determining its nature so as to evolve measures that can enhance the living condition of the people. Data was analyzed and the result revealed that flooding greatly impacted the economic life of the people; their social, cultural and the religious aspects of their lives. Percy, Andries, Africa, Alex (2016) examined the impact of floods on the livelihood of the community in Namibia. Their study found that all the villages were affected by flood. Adejoh, Richard, Ibrahim (2019) evaluated the aftermath of 2012 flooding in Kogi state, Nigeria. Their study found that flood victims lack knowledge and information on the cause of flooding, and the method of response, rescue and relief are not helpful.

## **METHODOLOGY**

Stratified sampling technique was employed where by each community in the study area constituted a stratum. 5 communities were therefore randomly selected for data collection. A simplified sample size determination (Taro Yamane) was used to determine the sample size with its formula as  $N/I+N(e)^2$ .

Questionnaire titled "The Impact of floods on Socio economic Livelihood of people in Ogbaru LGA" was used for the data collection. The instrument designed by the researcher is divided into two sections. The first section inquired the demographic and socio-economic characteristics of respondents, while the second section featured a number of response items of four-Likert Scale of Strongly Agree (SA = 4), Agree (A = 3), Disagree (D = 2) and Strongly disagree (SD =1).

Data collected was analyzed using the descriptive statistics (percentage tables and mean statistics). The mean scores for each of the hypothetical response items were therefore be ascertained. A mean value of 2.5(the standard unit) was used as the cut-off point, such that any hypothetical item that have a mean of 2.5 and above was considered statistically significant and fit to be upheld, the reverse was the case for any item that yielded mean score of less than 2.5. The formula for calculating mean score is as follows:

**Sum of  $Fx/n$ ,**

where: Sum = Summation, F = frequency of response, n = sample size (total number of respondents)

The researcher encountered some risk in the course of carrying out this research work. Most of the areas we visited were flooded, So, we have to enter canoe which helped us reach their residential buildings. Most of the residents were in a confused state that they hardly have time to answer our questionnaire because of the menace of flood in their area.

## FINDINGS AND DISCUSSION

Table 1 Demographic profile

Gender	No of Respondents	% Distribution
Male	268	69.4
Female	118	30.6
Total	386	100
Marital Status	No of Respondents	% Distribution
Single	57	14.8
Married	241	62.5
Divorced	11	2.8
Separated	0	0
Widowed	77	19.9
Total	386	100
Respondents' Age (Years)	No of Respondents	% Distribution
Below 15	7	1.8
16-19	34	8.8
20-39	148	38.4
40-59	141	36.5
60 & above	56	14.5
Total	386	

Household Size	No of Respondents	% Distribution	Table 1...
1-5	98	25.4	
6-10	206	53.4	
11-15	40	10.4	
16-20	31	8.0	
21 & above	11	2.8	
Total	386	100	
Major Livelihood Strategy	No of Respondents	% Distribution	
Crop Production	67	17.4	
Trading	71	18.4	
Livestock production	34	8.8	
Beer brewing	0	0	
Fishing	62	16.1	
Charcoal Burning	0	0	
Horticultural production	0	0	
Manufacturing	20	5.2	
Wage labour	58	15.0	
Civil service	60	15.5	
Others	14	3.6	
Total	386	100	

Majority of the respondents were male, making up 69.4 % of the entire respondents. On marital status, majority (62.5 %) of the respondents were also seen to be married. Most of the respondents fall within the age range of 20 - 59 years. Majority of the households in the study area has size of about 6 to 10 persons. The major livelihood strategies in the study area are; Crop production, trading, fishing, wage labour and civil service.

### Flood Impacts, Vulnerability and Coping Strategies

Table 2 How have people's life been affected during flooding in Ogbaru Local Government Area?

S/N	ITEMS	SA	A	D	SD	MEAN SCORE	REMARKS
1	People's houses often collapsed at the event of floods	312	46	20	8	3.7	Accepted
2	Collapsing of houses have forced people to relocate to a new area	250	87	40	9	3.5	Accepted

3	At the event of flood, people loose properties/assets such as; beds, fishing net, boat/canoe, bicycle, radio, television, chairs etc	336	30	20	0	3.8	Accepted
4	Several household experience crop damage during the floods	367	10	9	0	3.9	Accepted
5	Households also experience loss of food stocks during floods	303	53	24	6	3.7	Accepted
6	There has often been damage of school infrastructures (such as; classroom blocks, teachers, houses, toilets) due to the floods	186	105	60	45	3.2	Accepted
7	Roads are often impassible at the event of the floods	356	10	7	3	3.8	Accepted
8	Bridge culverts gets washed away or submerged during floods	376	10	0	0	4.0	Accepted
9	Schools get submerged/ surrounded by water at the event of floods	202	86	65	33	3.2	Accepted
10	School children experience disruption in attendance due to the floods	285	72	20	10	3.6	Accepted
11	Health facilities are often damaged due to the floods	190	136	40	20	3.3	Accepted
12	People experience disruption in access to health services due to the floods	214	101	31	40	3.3	Accepted
13	There have been cases of outbreak of diseases such as diarrhea, cough, malaria/fever, measles etc. during flooding in the community or at the camps for internally displaced persons	298	38	32	18	3.6	Accepted
14	Main source of water such as; boreholes, wells, river, spring, etc. are often affected by the floods	289	52	41	4	3.6	Accepted
15	Some lives have been lost during flooding and as a result flood aftermath.	349	26	6	5	3.9	Accepted

On the impacts of flooding in the study area, the findings of this study show that people are often forced to relocate from their homes at the event of flooding. They lose properties/assets,



crops and food stocks. School infrastructures are often damaged at the event of flooding as schools' environments are submerged, disrupting school pupil/students from academic activities. Health facilities and services as well as water supply are also affected thereby causing disease outbreaks.

Table 3 What are the underlying causes of vulnerability of people to flood disasters in Ogbaru Local Government Area?

S/N	ITEMS	SA	A	D	SD	MEAN SCORE	REMARKS
1	All households in the area are vulnerable to floods	38	156	105	87	2.4	Rejected
2	Vulnerability is due to the River Niger around which the area lies	266	62	28	30	3.5	Accepted
3	Only people residing in a flood prone area are vulnerable to floods	26	38	153	69	1.5	Accepted
4	People reside in flood prone areas as a result of poverty and lack of alternative livelihood(s)	78	192	66	50	2.8	Accepted
5	Some people stubbornly reside in flood prone areas even when they have alternative	290	46	35	15	3.6	Accepted
6	Because of the riverine nature of the area, people remain vulnerable even if all households relocate to a new area	26	98	152	110	2.1	Rejected
7	Female headed households in the area are more vulnerable to floods	28	17	166	175	1.7	Rejected
8	People living in mud houses experience more damage during flooding	372	12	2	0	4.0	Accepted

The vulnerability of people in the study area are majorly due to the River Niger around which the area lies. People reside in flood prone areas as a result of poverty and lack of alternative livelihood(s). Some people however stubbornly reside in flood prone areas even when they have alternative. People living in the mud houses experience more damage during flooding.

Table 4 What are the coping mechanisms employed by the people during floods

S/N	ITEMS	SA	A	D	SD	MEAN SCORE	REMARKS
1	From past occurrence, people now easily predict flooding periods and move their valuables out of flood prone houses	312	46	20	8	3.7	Accepted
2	People relocate to new areas during floods	250	87	40	9	3.5	Accepted
3	People use sand bags to make roads a bit passable during floods	336	30	20	0	3.8	Accepted
4	Raising of building heights	367	10	9	0	3.9	Accepted
5	Construction of houses with concrete structures	303	53	24	6	3.7	Accepted
6	Construction of flood diversion trenches	186	105	60	45	3.2	Accepted
7	Transfer of moveable properties to nearest neighbours	356	10	7	3	3.8	Accepted
8	Early planting/change in farming regime	376	10	0	0	4.0	Accepted
9	People could hardly cope with the flood hardship without assistance from the government	202	86	65	33	3.2	Accepted
10	Being very alert and sensitive to water movements and levels during rainy season	285	72	20	10	3.6	Accepted
11	People make up wooden constructions as a means of gaining access to their houses	190	136	40	20	3.3	Accepted

Data analysis shows that people in the study area easily predict floods and move their valuables out of flood prone houses. They use sand bags to make roads a bit passable during floods and make up wooden constructions as a means of gaining access to their houses. The people have also learnt to build more with concrete and to raise the height of their buildings. Farmers in the area have also taken to early planting/change in farming regime. Government interventions during flooding have greatly helped the people in the area in coping with flood disasters.

## CONCLUSION

As the data analysis indicates, it is clear from the study that floods had adverse impact on the socio-economic status of livelihoods for people in Ogbaru Local Government Area of Anambra State. It is also evident that there are varying underlying causes of people's vulnerability and this poses a challenge for reducing or minimizing vulnerability. Proximity to the flood prone area, residing in flood prone area and poverty were identified as being the main underlying causes of

vulnerability. The study also identified some coping mechanisms employed by the people, such as; being sensitive to the flood season, use of sand bags to make roads a bit passable during floods and use wooden constructions(boat) as a means of gaining access to their houses, adoption of early planting/change in farming regime by farmers, etc. Government interventions however, have been the major succor for the people during flood disasters.

## RECOMMENDATIONS

Based on the findings, the following policy considerations are recommended:

- Government and key stakeholders should engage communities in order for them to move permanently to higher grounds. The relocating should go with the provision of all the necessary social amenities such as schools, hospitals, infrastructure, water and agriculture support for a period of three (3) years to enable the households to settle. Consideration should also be made to introduce alternative livelihood strategies in the new area of settlement.
- There should be a deliberate policy to compel communities especially in rural areas to build house using durable materials and away from the flood prone areas.
- Construction of dams should be considered to trap the excess water. This could be used for irrigation. And also, Construction of canals into the main River Niger should be considered.

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## APPENDIX

### House Hold Questionnaire On The Impact Of Floods On The Socio-Economic Livelihood Of People In Ogbaru Lga Of Anambra State

#### Part One: Household Demographics

1. Set of Household Head:                      Male                      Female
2. Sex of Main Respondent:                      Male                      Female
3. Age of Head of Household  
     Below 15yrs      16-19yrs      20-39yrs      40-59yr      above 60yrs
4. Marital Status of household head:  
     Single              Married              Divorced              separated              widowed
5. Household size – How many people eat and stay in the household permanently  
     1 – 5              6 – 10              11 – 15      16 – 20              21 and above
- 1.1      What is the major livelihood strategy of household? (Multiple answers possible)

	Tick as appropriate <input checked="" type="checkbox"/>
Crop production	
Trading	
Livestock production	
Beer brewing	
Fishing	
Charcoal burning	
Horticultural production	
Manufacturing	
Wage labour	
Civil service	
Others	

**PART TWO: Flood Impacts, Vulnerability and Coping Strategies**

1. How have people's life been affected during flooding in Ogbaru Local Government Area?

S/N	ITEM	Strongly Agree	Agree	Disagree	Strongly Disagree
1	People's houses often collapsed at the event of				
2	Collapsing of houses have forced people to relocate to a new area				
3	At the event of flood, people loose properties/assets such as; Beds, Fishing Net, Boat/Canoe, Bicycle, Radio, Television, Chairs, etc.				
4	Several household experience crop damage during the floods				
5	Households also experience loss of food stocks during floods				
6	There has often been damage of school infrastructures (such as; classroom blocks, teacher's houses, toilets) due to the floods				
7	Roads are often impassable at the event of floods				
8	Bridge Culverts gets washed away or submerged during floods				
9	Schools get submerged/surrounded by water at the event of floods				
10	School children experience disruption in an attendance due to the floods				
11	Health facilities are often damaged due to the floods				
12	People experience disruption in access to health services due to the floods				
13	There have been cases of outbreak of diseases such as Diarrhea, Cough, Malaria <sup>7</sup> Fever, Measles, etc during flooding in the community or at the camps for Internally Displaced Persons				
14	Main source of water such as; Boreholes, wells, River, Spring, etc are often affected by the floods				
15	Some lives have been lost during flooding and as a result flood aftermaths				

**2. What are the underlying causes of vulnerability of people to flood disasters in Ogbaru Local Government Area?**

S/N	ITEM	Strongly Agree	Agree	Disagree	Strongly Disagree
1	All households in the area are vulnerable to floods				
2	Vulnerability is due to the River Niger around which the area lies				
3	Only people residing in a flood prone area are vulnerable to floods				
4	People reside in flood prone areas as a result of poverty and lack of alternative livelihood(s)				
5	Some people stubbornly reside in flood prone areas even when they have alternative				
6	Because of the riverine nature of the area, people remain vulnerable even if all every household relocates to a new area.				
7	Female headed households in the area are more vulnerable to floods				
8	People living in mud houses experience more damage during flooding				

**3. What are the coping mechanisms employed by the people during floods**

s/n	Item	Strongly Agree	Agree	Disagree	Strongly Disagree
1	From past occurrence, people now easily predict flooding periods and move their valuables out of flood prone houses.				
2	People relocate to new areas during floods				
3	People use sand bags to make roads a bit passable during floods				
4	Raising of building heights				
5	Construction of houses with concrete structures				
6	Construction of flood diversion trenches				
7	Transfer of moveable properties to nearest neighbours				
8	Early planting/change in farming regime				
9	People could hardly cope with the flood				

	hardship without assistance from the Government.				
10	Being very alert and sensitive to water movements and levels during rainy season				
11	People make up wooden constructions as a means of gaining access to their houses.				

Source: Designed by the Researcher