SOCIO-ECONOMIC CHARACTERISTICS OF HOUSEHOLDS IMPACTED BY FLOODING IN YENAGOA METROPOLIS

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ABSTRACT

Flooding presents a wide range of complex issues such as displacement of people, loss of lives and property, disruption of cultural and community activities. This study therefore seeks to document the socio-economic characteristics of victims of flood in the metropolis of Yenagoa, Bayelsa State. The study was based on survey design and the population of the study was residents of the study who had been impacted by flooding. A total of 399 persons from ten communities that make up Yenagoa metropolis were drawn as the sample size using the Taro Yamane formula. The simple random sampling method was used in administering copies of the questionnaire to the study population. Both primary and secondary data were used for the study. Descriptive statistics was used in analysing the data generated from the field. The study found that 70.5% women are most impacted by flooding. It is also revealed by the study that 34% of flood victims are between the ages of 40-49. The study therefore recommends that relief materials donated by government agencies and organizations that support disaster victims give more attention to women and the middle-aged citizens during the distribution of such materials.
Keywords: Property, Damage, Households, Disaster, Status.

Introduction

Flooding is a devastating natural hazard that can cause severe economic and human losses. It inflicts substantial harm on households owing to its destructive forces in terms of wave and tidal energy. Zahiran, et al. (2008) observed that floods are the most lethal kind of hydro-

meteorological disasters in the United Sates. According to data from the (Spatial Hazard Events and Losses Database for the United States (SHELDUS,2021), floods claimed over two thousand lives from 1970-2000, destroyed social and economic infrastructure and degraded the already fragile ecosystems. In a report by the Federal Emergency Management Agency (FEMA,1991) it was reported that flood events were responsible for the death of more than 10,000 people in the US since 1900. It further reported that floods are responsible for up to 50,000 deaths and adversely affect some 75 million people on the average worldwide annually. Floods have a large variety of societal impacts that span across space and time. While some of these impacts are quite palpable and are well documented, others are somehow elusive and not much is known about their complex processes and long-term effects. The point made by Bankoff (2003) about the indirect effect of flooding is germane. His view is that indirect impact results in losses that occur outside of the flood event in space and time, such a loss can have indirect impact on the people and community and can result in losses that occur outside of the flood event in space and time, such as losses due to business disruption. Notwithstanding, the most immediate and apparent impact of floods is the direct damage caused by physical contact between floodwaters and economic assets, cultural heritage, or human beings, with the result for humans being loss of personal belongings, mental depression, injuries and deaths.

With the increasing effects of climate change as a result of uncontrolled emission of carbon and other greenhouse gases into the atmosphere, it is expected that downpours will increase thus putting people and economic assets in risk-prone areas at higher flood risk (Homi, Kharas & Hofer, 2018). Globally, it is estimated that economic loss due to flooding was put at 4.1trillion (Roy, et al. 2018). With such colossal loss of property there seems to be a two-way reinforcing linkage between flooding and poverty because both feed off on each other. This web between poverty and flooding makes the impact of flooding much more severe by increasing the poverty index. Flood can destroy the social capital of people and human's physical environment. When flood becomes a frequent occurrence, the effects are usually complex with devastating impact on the living standards and development progress of people, especially among the very poor of the society (Dube, Mtapuri, & Matunhu, 2018). The impact of floods on the poor is usually severe immediately after of its occurrence, and the effect can stretch for a long time and strain socio economic survival among the vulnerable constituency (Egbinola, Olaniran, & Amanambu, 2017).

The impact of flooding on economic growth is well documented (Chapagain & Raizada 2017; Jongman 2018; Matemilola & Elegbede 2017; Mwape 2009; Olanrewaju et al. 2019). In a flood impact study by Mwape (2009), the researcher contended that 94 per cent of the respondents who were primarily farmers had their farms devasted by floods, providing an insight into the high vulnerability of farming families. In another study by (Ikechukwu 2015) in Port Harcourt, Nigeria, the income of 30 per cent of the research respondents has been negatively impacted while 29.4 per cent had their buildings destroyed by flooding which is a regular occurrence in the rainy season. Different forms of assets are lost to floods including both productive assets like fishing and farming equipment, as well as non-productive assets such as infrastructure, furniture, houses, electronics, and clothing (UN 2016). Floods have several socio-economic and political implications which can cause a wide range of complex issues. Some of the

immediate consequences include the displacement of people, destruction of infrastructure such as houses and roads, damage to farms and crops and loss of cattle and livestock, changes in people's way of life, culture, community, political systems, environment, health and wellbeing, personal and property rights and fears and aspirations (Theron, 2007). The destructive nature of flooding clearly and ultimately undermines the socio-economic status of the victims and by extension the development of the communities affected (Richard, Samans, Corrigan & Hanouz 2017).

It is important to remark that Nigeria is a multi-ethnic, religious and culturally diverse country with 36 federating units and the Federal Capital Territory. As reported by World Bank (2022), 40% of Nigerians that is about 83 million people lived below the poverty line, while another 25% which represents 53 million were vulnerable. With Nigeria's population growth continuing to outpace poverty reduction, the number of Nigerians living in extreme poverty is set to rise by 7.7 million between 2019 and 2024. Those in this category reside in slums and shanties which are proliferated in Nigeria's urban environment. Such settlements are poorly built, making them prone to collapse when struck by floods or storms (Wahab 2017). With already declining socio-economic status, the incidence of flood further decreases the socio-economic status of the residents. In a study conducted by (Lindsell & Prater, 2003) in Scotland the researchers opined that the level of wellbeing of individuals, communities and society can be linked to climate induced disasters. The study further contended that aspects related to the level of literacy and education, the existence of peace and security, access to basic human rights, systems of good governance, social equity, positive traditional values, knowledge structure, customs and ideological beliefs are dangerously affected during flooding.

Literature Review

In Nigeria, the disruption of education in the flood impacted areas is quite evident. Schools serve as emergency shelters during flooding and educational materials are destroyed. In places where flood occurs parents are reluctant to send their children to school because of the fear of uncertainty. Parents are concerned that storms or rainfall can increase the severity of floods when the children are away at school and so prefer to have them at home where they have greater control over their safety, should the severity of flooding increase or there be need of evacuation (Oghenekohwo & Oputu, 2017). Teachers and other support staff in the educational system are also affected. Winthrop & McGivney (2015) mentioned that the teachers suffer psychological trauma because of the terrible conditions either in the school, home, or emergency shelter to get their lesson notes ready. They are also confronted with their own flooded homes and damaged properties hence they do not deliver optimally. Furthermore, during flood parents on their part are limited in terms of support for their children's education. (Kousky 2016 remarked that the severe hardship flooding brings to poor families sometimes force parents to withdraw their wards totally from school. Erica, Jessie & Stephanie (2018) pointedly remarked that there is evidence of overall poor educational performances and outcomes, among such disadvantaged group that continue into adulthood. These scholars hinged their position on the premise that flooding disrupts the schooling of children and the delivery of education. The combined effect of flooding is that the quality of education a child in flood zones receives is grossly inadequate thus limiting the economic opportunities the child in life (Mudavanhu 2014).

Other socio-economic parameters are also disrupted. Lindsell & Prater (2003) pointedly concluded on the note that the social impacts arising from flood can significantly cause a long-term problem for specific households, gender and businesses in areas overtaken by flood. The point remains that different demographics can be exposed to greater relative risks given their socio-economic conditions. Ariyabandu & Wickramasinghe (2005) underscored the point by asserting that that women are often more vulnerable to disasters than men owing to conventional gender responsibilities and relations. But Brouwer, et al. (2007) were quite unambiguous on the demographic composition of victims of flood. Their conclusion was that during flood, men and women, young and old, because of their different composition, needs and vulnerabilities and the roles they play suffer differently. However, (Smith &Ward, 1998) in a study undertaken in Texas established that socially vulnerable populations suffer disproportionately in terms of property damage, injury, and death as a result of physical impacts of disaster. For reasons of economic disadvantage, low human capital, limited access to social and political resources, residential choices, and evacuation dynamics are the social factors that contribute to observed differences in disaster vulnerability and economic class (Holmes,2008). Loss of income is experienced by flood victims as their sources of livelihoods which yield household income are affected (Kwari, Paul, & Shekarau 2015; Mwape 2009). As argued by Sardar, Javed, & Amir-ud-Din 2016; Jongman (2018) property ownership confers social status on the owner. A property owner whose property is damaged or destroyed during flooding loses his esteem and suffers economic loss. In many cases the loss is huge and runs in billions. For instance, the 2012 flood in Nigeria destroyed property worth over10 billion US dollars (Olalekan, 2018; Kwari, Paul, & Shekarau 2015).

Several studies have shown how disasters impact on housing, land, livestock, agriculture, and infrastructure (Parker, 2000; United Nations Environmental Programme (UNEP, 2006). Majority of the studies seen by the researchers centred around the causes and economic and environmental impact of flooding (Risk, 2005). It is also important to note that a substantial part of the literature on flooding relates to community resilience and adaptive/mitigation strategies by victims of flood. Floods create great natural threats to life, health, population and other socio-economic variables (Parker, 2000; United Nations Environmental Programme (UNEP, 2006). Yet the characteristics of the people affected and how disasters impact on different categories of people, men, women, children, aged people, etc are hardly discussed as observed in the literature. A study conducted by Khandlhela & May (2006) on poverty, vulnerability and flooding in the Limpopo Province in South Africa argued that while disasters may affect everyone the poor people are made more vulnerable from a web of circumstances that make them prone to the effects of disasters. Curiously, there are no data on the demographic characteristics of the victims of the flooding in Nigeria and particularly Bayelsa State. If such data exist, they are clearly not in the public domain. The importance of such data cannot be overemphasized in national planning and allocation of resources. It is therefore necessary to understand the socio-economic characteristics of the victims of flood disasters. Socioeconomic status is the position of an individual or group on the socioeconomic scale, which is determined by a combination of social and economic factors such as income, amount and kind of education, type and prestige of occupation, place of residence, ethnic origin and religious background (American Psychological

Association (APA, 2020). Against this background, this study documents the income, education, occupation among other social variables of those affected by climate induced disaster particularly flooding.

Methodology

The research design for this study is hinged on the cross-sectional research design. Residents within the Yenagoa metropolis constituted the study population. The target population has knowledge included those impacted by flood. According to the (National population commission (NPC, 2022), the projected population of Yenagoa metropolis is 653,901. For the purposes of this study the city of Yenagoa was divided into ten (10) communities in line with the existing planning guidelines in the city. The list of the communities and their population is presented in table 1. Both primary and secondary data were extensively used for this study. In using the primary data, semi structured questionnaire was used as the instrument for the study.

Table 1: Selected Communities and their population

S/No	Communities	Population
1	Amarata-Epie	23,519
2	Azikoro	16,819
3	Biogbolo	10,728
4	Ekeki	10,728
5	Kpansia	24,564
6	Okutukutu	11,045
7	Opolo	24,677
8	Swali	16,667
9	Yenagoa	57,694
10	Yenezue-Gene	13,767
	Total	**210,208**

To determine the sample size, Taro Yamane formula was used. This formula is designed to reduce a large sample to manageable size. The formula is written as;

$$n = \frac{N}{1+N(e)^2} \ldots \ldots \text{Equation 1}$$

Where

N = Target Population (210,208)

e = Constant (0.05 at 95%)

n = Sample Size

By deploying this formula, the derived sample population was 399. However, to determine the number of respondents in the various communities that make up Yenagoa metropolis, the proportional allocation method was used. The different strata and their selected population is shown in table 2. The proportional allocation method is expressed as follows:

Table 2: Determination of Sampling Size

S/No	Communities	Population	Sampling Size
1	Amarata-Epie	23,519	45
2	Azikoro	16,819	32
3	Biogbolo	10,728	20
4	Ekeki	10,728	20
5	Kpansia	24,564	47
6	Okutukutu	11,045	21
7	Opolo	24,677	47
8	Swali	16,667	32
9	Yenagoa	57,694	110
10	Yenezue-Gene	13,767	26
	Total	**210,208**	**400**

The simple random sampling technique method was used in administering copies of the questionnaire. This method of sampling was adopted so that all the elements in each stratum will have equal or zero chance of being selected. In using this method, the ballot method was deployed. The ten (10) communities selected presented in table 2 represent 34 per cent of the entire study area. Data from the field were analysed using inferential and descriptive statistics.

Findings

As mentioned in the introduction, this study seeks to establish the socio-economic characteristics of victims of flooding in Yenagoa metropolis. It is necessary to note that socioeconomic characteristics is the position of an individual or group of individuals on the socioeconomic scale, which usually is predicated on a combination of social and economic variables such as income, level of education, type and prestige of occupation, place of residence, among others. These factors that define the status of the victims of flood in Yenagoa metropolis is demonstrated in table 3.

Table 3: Demographic and Socio-Economic Data of Victims of Flood in Yenagoa Metropolis

	YENE	YENA	SWA	OPO	OKU	KPAN	EKE	BIO	AZIK	AMA	TOTAL	%
SEX												
Female	18 (72)	60 (60)	25 (78.1)	8 (57.1)	11 (52.3)	15 (71.4)	17 (85)	16 (80)	25 (78.1)	37 (84.1)	232	70.5
Male	7 (28)	40 (40)	7 (21.9)	6 (42.9)	10 (47.7)	6 (28.6)	3 (15)	4 (20)	7 (21.9)	7 (15.9)	97	29.5
Total	25	100	32	14	21	21	20	20	32	44	329	100.0
MARITAL STATUS												
Single	3 (12)	24 (24)	3 (9.4)	3 (21.4)	2 (9.5)	6 (28.6)		1 (5)	8 (25)	3 (6.8)	53	16.1
Married	22 (88)	76 (76)	29 (90.6)	9 (64.3)	19 (90.5)	15 (71.4)	18 (90)	18 (95)	23 (71.9)	37 (84)	266	80.9
Divorced									1 (3.1)	1 (2.3)	2	0.6
Widower							2 (10)			2 (4.6)	4	1.2

	Yene	Yena	Swa	Opo	Oku	Kpan	Eke	Bio	Azik	Ama	Total	%
Separated				2 (14.3)				1		1 (2.3)	4	1.2
Total	25	100	32	14	21	21	20	20	32	44	329	100.0
AGE												
18 – 29		23 (23)		1 (7.1)	1 (4.8)				2 (6.2)		27	8.2
30 – 39	3 (12)	10 (10)	4 (12.5)	4 (28.6)	3 (14.3)	9 (42.8)	1 (5)	1 (5)	10 (31.2)	2 (4.6)	47	14.3
40 – 49	9 (36)	47 (47)	8 (25)	6 (42.6)	5 (23.8)	7 (33.3)	3 (15)	7 (35)	13 (40.6)	7 (15.9)	112	34.0
50 – 59	13 (52)	17 (17)	15 (46.9)		8 (38.1)	2 (9.5)	5 (25)	9 (45)	7 (21.9)	20 (46.5)	96	29.2
60 and Above		3 (3)	5 (15.6)	3 (21.3)	5 (23.8)	2 (9.5)	11 (55)	3 (15)		15 (34.1)	47	14.3
Total	25	100	32	14	21	21	20	20	32	44	329	100.0
OCCUPATION												
Civil Servant	21 (84)	35 (35)	20 (62.5)	8 (57.1)	10 (47.6)	10 (47.6)	8 (32	9 (36)	13 (40.6)	39 (88.6)	173	52.6
Company Worker	2 (8)		3 (9.4)	2 (14.3)	1 (4.8)	3 (14.3)	3 (12)		4 (12.5)	1 (2.3)	19	5.8
Professional	1 (4)	5 (5)	6 (18.8)		3 (14.3)	4 (19)	1 (4)	2 (8)	3 (9.4)		25	7.6
Artisan		6 (6)		1 (7.1)	1 (4.8)				2 (6.2)		10	3.0
Trading	1 (4)	15 (15)		1 (7.1)	4 (19)	3 (14.3)	1 (4)		1 (3.1)		26	7.9
Politician		6 (6)	3 (9.4)		3 (14.3)		8 (32)	4 (16)		4 (9.1)	28	8.5
Farming		7 (7)		1 (7.1)							8	2.5
Fishing		13 (13)									13	4.0
Others		13 (13)		1 (7.1)		3 (4)	1 (4)		9 (28.2)		27	8.2
Total	25	100	32	14	21	21	20	20	32	44	329	100.0
EDUCATION												
FSLC/WASC		15 (15)		2 (14.3)	4 (19)				2 (6.2)		23	7.0
NCE/ND	1 (4)	7 (7)			3 (14.3)			1 (5)	3 (9.4)	1 (2.3)	16	4.9
HND/BSC	24 (96)	61 (61)	30 (93.8)	10 (71.4)	16 (76.2)	13 (62)	9 (45)	16 (80)	13 (40.6)	40 (90.9)	232	70.5
MSC/PHD		17 (17)	2 (6.2)	2 (14.3)	2 (9.5)	4 (19)	11 (55)	3 (15)	14 (43.8)	3 (6.8)	58	17.6
Total	25	100	32	14	21	21	20	20	32	44	329	100.0
INCOME												
0 - #30,000		4 (4)									4	1.2
#30,000 - #50,000		14 (14)		1 (7.1)					7 (21.9)		22	6.7
#50,000 - #120,000		25 (25)			4 (19)	4 (19)			1 (3.1)		34	10.3
#120,000 - #250,000	5 (20)	30 (30)	8 (25)		2 (9.5)	7 (33.3)		6 (30)	8 (25)	9 (20.5)	75	22.8
#250,000 and above	20 (80)	27 (27)	24 (75)	13 (92.9)	15 (71.5)	10 (47.7)	20 (100)	14 (70)	16 (50)	35 (79.5)	194	59.0
Total	25	100	32	14	21	21	20	20	32	44	329	100.0

Source: Researchers' Field Survey, 2020.

*Yene-Yenezue-gene, Yena-Yenagoa, Swa-Swali, Opo-Opolo, Oku-Okutukutu, Kpan-Kpansia, Eke-Ekeki, Bio-Biogbolo, Azik-Azikoro, Ama-Amarata

The study reveals that out of 329 victims surveyed in the study, 232 of them which represent 70.5% are females while only 97 that 29.5%. This suggests that most of the victims of flood in the study area are females. In the African setting, women usually care for home and bear the burden of looking after homes. This may account for why women are more affected by flood. It is striking to note that in all the ten communities surveyed, flooding victims are more of women than men. This finding agrees with Nwape, (2009) who contended that women are more vulnerable to flooding than men. Although Biogwe community recorded the highest number of male victims. In contrast, Ekegwe community had the least number of females affected by flood. Curiously, the study shows that across all the communities sampled, women are affected than the women. Another finding by the study is to the effect that married people are worst hit by flood. As shown in table 3, out of the sampled population, 80.9% of the respondents are married people and women. On the other hand, respondents who are divorced constitute the lowest proportion of the victims of the flood.

In terms of age, 34% of respondents within the age bracket of 40-49 are victims of flood. This translates to over one third of the sampled population and it constitute the highest proportion of those affected by flood. The least affected are those in the age bracket of 18-29 years old. This group contains an 8.2% of the 329 respondents. Concerning the occupation of the victims of flood, 173 (52.6%) of the respondents are civil servants. Interestingly, this is over half of the entire sample size. Therefore, it can be safely inferred that over half of the victims of the flood in the study area are those in the employment of government at different levels perhaps because Yenagoa is largely a civil servant city. The private sector preserve is limited. Therefore, most of the city dwellers are those employed by government ministries, parastatals and agencies (Bayelsa State Government,2019). On the other hand, farmers are the least impacted by flood. Yenagoa is an urban centre that houses the seat of government of Bayelsa state and as typical of many Nigerian urban centres, many residents do not engage in urban farming thus the reduced number of farmers in the study area.

Furthermore, analysis of data from the field indicates that respondents with Higher National Diploma and bachelor's degree have the largest proportion of victims of flood. Those in this group represent two thirds (70.5%) of the entire sampled population. However, only 16 (4.9%) of the respondents with National certificate of Education/National Diploma out of a total respondent of 329 are affected by flood. The result therefore suggests that holders of National Diploma/National Certificate of Education are the least impacted by flood. Results on the income level of victims of flood ion Yenagoa metropolis suggests that those earn N250, 000 and above constitute over half of the entire population sample. Clearly, as shown in table 3, the high-income earners are in the majority of victims of flooding. This finding reveals that the middle income and the elites in terms of income are not spared by flood. While those whose income is N30, 000 are in the lowest category of people impacted by flood.

Conclusion and Recommendations

Coastal communities in the Niger Delta are usually ravaged by constant flooding during almost every wet season. The implication of such seasonal change is loss of lives and property and a decline in the socio-economic activities of the people and indeed the community. As

pointed out in the literature, property ownership confers social status on the owner and anything that causes damage or loss impacts negatively on the esteem of the property owner. In many cases the loss is huge and runs in billions thus altering the socio economics of the affected communities. Against this backdrop, this study x-rayed the socio-economic status of residents impacted by flood in Yenagoa, the capital of Bayelsa State. The study observed that women are most impacted. In the African setting, women usually care for home and bear the burden of looking after homes. The study therefore recommends that relief materials donated by government agencies and organizations that support disaster victims give more attention to women. This will help to elevate their socio-economic status.

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