RESETTLEMENT AND READJUSTMENT PATTERNS OF RURAL DWELLERS DURING AND AFTER FLOOD DISASTERS IN BAYELSA STATE NIGERIA

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ABSTRACT: *Globally, riverine areas are naturally prone to flooding. In 2012 and 2018 for example, flooding became a national disaster in Nigeria. While Bayelsa State was recorded as one of the worst affected, the case of Southern Ijaw LGA was most lamentable. Out of the eight (8) Local government areas in Bayelsa state, seven (7) were adversely affected. Records revealed that public and private properties, infrastructure and facilities worth billions of naira were fully or partly submerged and destroyed. As part of its intervention efforts, the government provided internally displaced person's camps and supplied relief materials. Other non-governmental organizations and philanthropists also supported with relief materials. Till date, the living conditions of some of the victims remain deplorable. This study examined the rural dwellers' resettlement and re-adjustment patterns of victims of flood disasters in riverine communities of Southern Ijaw LGA.The study investigates the resettlement and readjustment patterns of flood victims in Bayelsa state. Exploratory and Descriptive survey designs were used in this study. A combination of cluster and simple random sampling techniques were adopted. Also, the instruments of questionnaire, interview schedules and focus group discussion were used. Taro Yamane (1967) formula was used to derive a sample size of 400. Chi-square (x^2) test statistic was used to test the hypothesis. The study indicated that flood victims are more in shock and confusion during and immediately after flood disasters as well as worsened situation in terms of resettlement and re-adjustment patterns. Their conditions in terms of resettlement and re-adjustment pattern showed in their emotions. Larger proportions of respondents agreed that flooding occasions the dislocation and relocation of people and communities. From the study, resettlement and re-adjustment patterns of flood victims revealed that almost all flood victims are at state of shock and confusion during flood disasters. They are left with no other option than to evacuate their residences to temporary 'open-room' apartments provided by the government. The study concludes that the work of disaster managers before, during and after disasters is known to be very fragmented. Engineers do not usually work and cooperate with health professional and planners. Efforts should be made by the government to prevent the escalation of the destructive capacity of flooding in flood prone zones across the state by providing good drainage systems in various communities as well as making efforts to relocate people residing in the rural riverine areas that are most prone and vulnerable to future flood occurrence to upland areas.*

KEYWORDS: resettlement, re-adjustment, dislocation, location, flood disaster.

INTRODUCTION

Flooding is the most common of all environmental hazards. The reason lies in the widespread geographical distribution of river valleys and low-lying coasts with obvious attraction for human settlement. Sinclair and Pegram (2003) stated that the devastating effects of floods can be mitigated

though cannot be prevented. Early warning is required for mitigation. With population increase, and rural urban drift, several persons live on flood plains which serve as settlements which are considered to be most flood risk areas. Advance flood warning is necessary to take necessary actions to mitigate the calamity. Those in these flood plains are most at risk, not only due to their geographical location but also poor financial resources for recovery from flooding.

According to Crossman, *et al*. (2006), flood risk is a threat to several communities which cannot be eliminated but its impact controlled They averred that even in the UK; flood risk threatens several communities, roughly 1.8 million households and 140,000 commercial properties in England and Wales involving up to between 4 and 5 million people. They said that flood risk mitigation actions are carried out by relevant authorities, Part of which are the provision of flood warning, storage, flood defenses, planning for emergency etc. Crossman, *et al* (2006) emphasized information dissemination as an essential aspect of flood risk mitigation. There is need for both public and private sectors to partner to tackle flood risk. Mirza, *et al.* (2003) mentioned that flood disaster affects individuals, households and communities differently thereby affecting their coping abilities diversely. Coping strategies include stockpiling of foods by way of building food shelters, migrating to flood free communities etc.

Smith (1996) identified role of disasters, natural, human and technology induced disasters, in shaping the coping abilities of people. He opined that disasters enable the study of the role of coping in periods of stressful occurrences. He tried to find a nexus between coping and disaster whether or not coping influence outcomes. And further to understand how the devastating effects of disasters shape people's abilities to fare after such disasters. He also wants to know the impact of various coping strategies if indeed coping makes a difference.

Rashid (2000) described the 1998 floods which lasted for over 65 days in Bangladesh and marooned 33 million people as devastating and about the worst experienced flood disaster in that country. 18 million people were thrown into immediate need for emergency food and health services. Roads, bridges and other important infrastructure, houses and livelihood activities were destroyed. Food, medicine and clothing were distributed to affected needy persons. People were moved to relief camps to survive the effects. Lots of persons were completely hopeless. This was shown by their show of despair due to the loss of personal effects and means of livelihood (Rashid 2000). According to Mohapatra and Singh (2003), flooding is the most frequent disaster in India. Till date, well over 33 million persons have fallen victims. They explained that the African continent had also suffered the effects of severe flooding, UNEP (2006), explained that the continent is the most affected in terms of flood disasters. Severe rains leading to rising flood waters is widespread in Africa. Homes and livelihoods are often destroyed.

Parker (2000) also observed that floods was a serious natural problem in several African countries, affecting lives of people. He averred that human settlements and socio-economic and other activities of man in Africa are caused by undue interference on flood plains and tropical storms. Though he pointed out that settlements been found on floodplains was not peculiar to Africa alone. He expressed the thought that though regional settlements avoided flood prone areas, consequent settlement spring ups caused the development of flood plains. He mentioned Egypt as a typical example due to the dense population found on the river Nile flood plain compared to other areas of Egypt that is more or less, inhabited. On the benefit of flood plains to African communities, Parker (2000) mentioned the yearly fertilization of land by flood sediments. He saw the most visible damage caused by floods as structural damage to houses occupied by households, shops and public

buildings including their contents and loss of source of food through the destruction of crops and livestock. He noted that flood also destroys infrastructures such as bridges, airports, electricity distribution equipment, roads, rail lines, water supply and sewage disposal systems thus creating enormous economic loss. He also saw flooding as a major cause of food shortage as in Sudan during the1988 severe flooding in that country.

According to OCHA (2008), in 2007, Southern Africa countries experienced severe flooding that led to the displacement of 194,103 persons that were evacuated into displaced peoples camp. Several properties and livelihoods were destroyed by the ravaging flood. According to Odubo (2014), the devastating flood of 2012 in Nigeria, displaced hundreds of persons in Southern Ijaw local government area of Bayelsa state leading to the disruption of social life and cultural heritage of the people. While Bayelsa State is regarded as one of the worst affected States of the 2012 flood disaster in Nigeria, the National Mirror, of 9th April, 2013, reported that Southern Ijaw Local Government was massively impacted. The paper decried that the post flood condition of the people of Southern Ijaw was lamentable as almost all clans and communities of the Local Government were affected with very severe socio-economic and cultural consequences.

As in 2012, the 2018 flooding disaster in Nigeria was devastating. Bayelsa state was one of the worst affected. Southern Ijaw was still massively impacted. Entire communities were submerged. According to the National Emergency Management Authority (NEMA), report of September 2018, over thirteen thousand houses were partially or completely destroyed by flood in the twelve affected states in Nigeria and that Local government offices, churches, schools that were not submerged were used to house displaced persons by the state governments. Southern Ijaw was not an exception. As at same September 2018, NEMA averred that the Presidential Committee on Flood Relief and Rehabilitation constructed some IDP camps to help house the ever-increasing flood victims, yet it was insufficient with the population lacking blankets, foams or mats, hygiene kits, food etc. There was the urgent need for food and water assistance for those in IDPs. Most IDPs were overcrowded, resulting in stampedes for basic items supplied.

Objective of the study
To investigate the resettlement and re-adjustment patterns of flood victims in Bayelsa state.

Area of study
Southern Ijaw Local Government Area with a population of 321, 808, has the second largest population in Bayelsa State after Yenagoa Local Government Area. The main occupations of the people are fishing and farming. Fishing in the mangrove zone while and subsistence farming and fishing in the freshwater forest zone. However, traditionally, the men are involved in canoe carving and distillation of traditional gin known as kai kai, Bayelsa State, in the Niger Delta region and south south of Nigeria which was created in 1996 has eight local government areas. Southern Ijaw which was created in 1991 is one of the Eight Local Government Areas in the State. It has its headquarter at Oporoma (or Osokoma) in the North of the area at 4^0 48' 17^0 N6^0 04'44" E (Figure 1). The area has a coastline of approximately 60km on the Bight of Benin. It is the largest Local Government Area in Nigeria (Landscape). The people and their language are known as Izon. The LGA comprises of seven clans (7) which include; Boma, Oporoma, Olodiama, Apoi/Bassan, Tarakiri and Koluama clans. Most communities in Koluama and Apoi/Bassan are situated along the saltwater areas, hence its resistance to the flood disaster which swept most communities in the freshwater region.
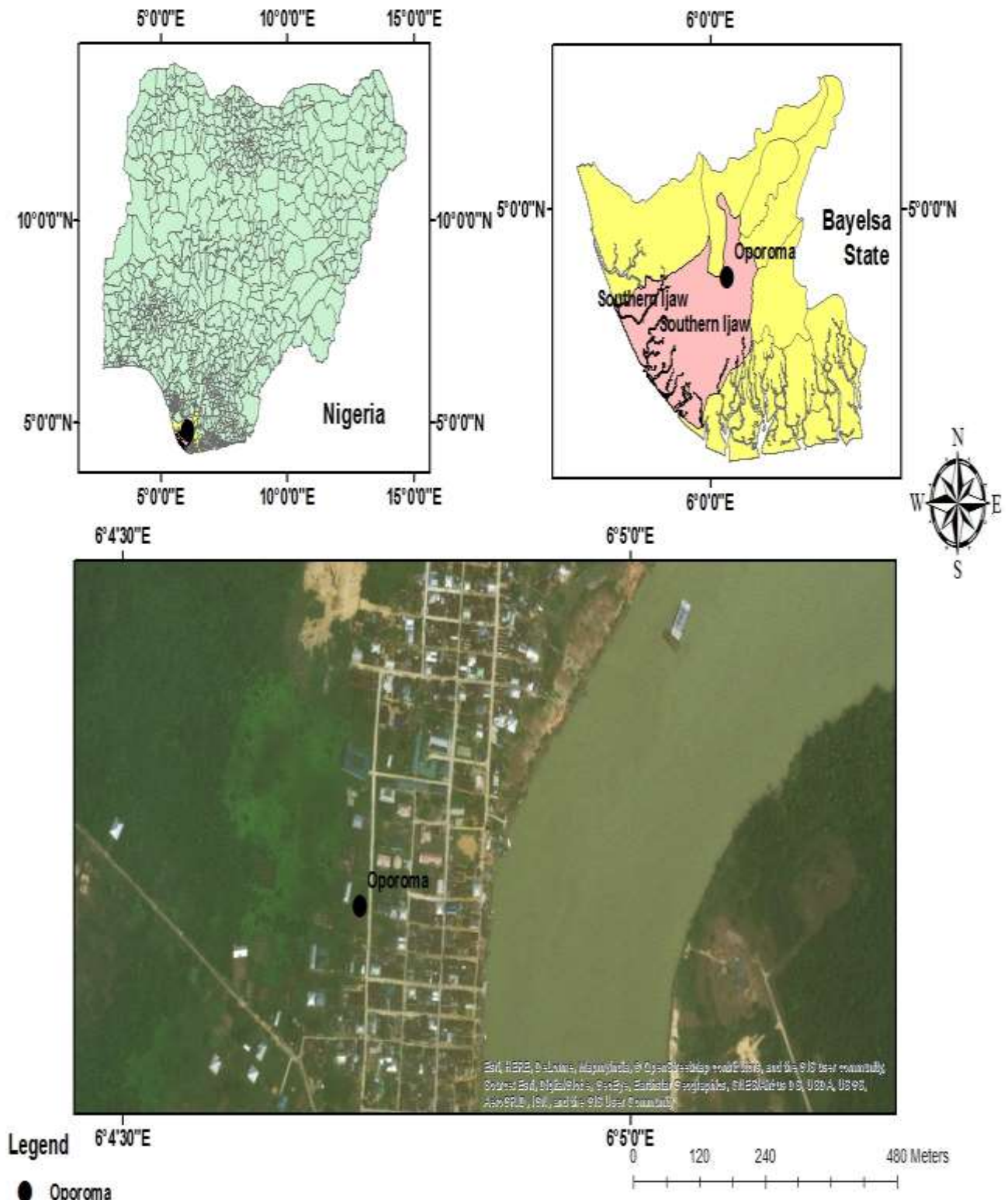
Figure 1: Map of Bayelsa State Showing the Study Area

MATERIALS AND METHODS

The research designs used in this study are both exploratory and descriptive inferential research designs. A simple random and cluster sampling techniques were adopted in this study. Also adopted are Focus group discussions and Key interview informants, simple percentage, tables and charts were used in analysing the socio-demographic data while the mean and standard deviation were utilized to analyse the Likert scale questions of Strongly Agree (5) Agree (4), Disagree (3) Strongly Disagree (2) and Undecided (1). The mean cut off for accepting or rejecting any item was 2.50. Finally, the chi-square (x^2) test statistic was used to test the hypothesis. Data was collected from both primary and secondary sources. A sampled size of 400 persons out of the total population of 321, 808 being the 2006 National Population Census figure was used. The *Taro Yemen Formula* was employed to arrive at this figure.

RESULT AND DISCUSSION

Investigating the Resettlement, and Re-Adjustment Patterns of Flood Victims after Flood Incidence in Bayelsa State

Table 1. Summary of the Likert Scale Showing Descriptive Statistics of Resettlement, and Re-Adjustment Patterns of the Flood Victims After Flood Disaster

Variable Considered	N	Minimum	Maximum	Mean	Std. Deviation
EMOTION	386	1.00	5.00	3.1503	1.50090
FLUDVICSIUATION	386	1.00	5.00	4.2668	1.01100
Valid N (listwise)	386				

Source: Computation

Note: (1) EMOTION=Flood Victims' emotional state during the flood (2) FLUDVICSIUATION= Flood victims' situation after the flood disaster (3) N=Number of Respondents

In analyzing the Likert Scale questions of Strongly Agree (5) Agree (4), Disagree (3) Strongly Disagree (2) and Undecided (1) on the resettlement and re-adjustment patterns of the flood victims in the study areas during and after the flood disaster, the assumption is that the mean cut off for accepting or rejecting any item was 2.50. The decision rule was that any item with a mean score of less than 2.50 was rejected while those above 2.50 were accepted.

As indicated in table 1, the mean scores of the Likert scale questions on the resettlement and readjustment patterns of flood victims in the study areas during and after the flood disaster shows that their emotional state during the process of re-settling during the flood incidence is 3.1503, while the mean score of the Likert scale question on the flood victims' situation getting worse than pre-flood period after the flood disaster is 4.2668. This undoubtedly implies that the Likert scale mean scores on the variables considered as the re-settlement and readjustment patterns of the flood victims are greater than 2.50. This also means that all variables considered to be the resettlement and readjustment patterns of the flood victims in the study areas are accepted. That is, the flood victims were more in shock and confusion during and immediately after the flood disaster as well as worsened current situation in terms of resettlement and re-adjustment patterns.

Test of Null Hypothesis

H_O = Flooding does not occasion the dislocation and relocation of people and communities.

Table 2. Computation of Flooding and Resettlement * Migration Cross tabulation

			MIGRATION					
			UN	SD	D	A	SA	Total
RESETLEMENT	UN	Count	1	10	39	7	0	57
		Expected Count	13.6	14.5	10.6	7.8	10.5	57.0
	SD	Count	23	29	11	11	28	102
		Expected Count	24.3	25.9	19.0	14.0	18.8	102.0
	D	Count	31	18	0	6	28	83
		Expected Count	19.8	21.1	15.5	11.4	15.3	83.0
	A	Count	21	26	6	24	4	81
		Expected Count	19.3	20.6	15.1	11.1	14.9	81.0
	SA	Count	16	15	16	5	11	63
		Expected Count	15.0	16.0	11.8	8.7	11.6	63.0
Total		Count	92	98	72	53	71	386
		Expected Count	92.0	98.0	72.0	53.0	71.0	386.0

The table above indicates the observed and expected frequencies of the respondents, and the residual (the difference of the observed and expected frequencies).

Table 3. Chi-Square Tests Statistics

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	176.984[a]	16	.000
Likelihood Ratio	179.115	16	.000
Linear-by-Linear Association	2.672	1	.102
N of Valid Cases	386		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.83.

This table shows the value of the chi-square statistic (176.984[a]), the degree of freedom (df =16), and the p value given on the last line of the output. Hence, the p value is .000. Under the table are important statements about the assumptions of chi-square. In this table, zero of the cells (categories) have expected frequencies less than 5. Thus, the assumption has been satisfied. In this, the decision to reject H_0 or not is stated thus: If the p value (.000) is less than or equal to α level, then we can reject H_0. In this case, the p value (.000) is less than α (.05) so we reject H_0. That is, there is sufficient evidence to conclude that flooding occasions the dislocation and relocation of people and communities.

*But I must confess to you it was not that easy to be in a camp during big flood. Almost everybody in the community resettled in a classroom for more than three weeks cooking together, eating together, bathing together…you know what it means. Most time we fought because of one thing or the other. It was not that easy my brother. Some of our children fell sick because of the inconvenience. It was not easy at all. There was nothing to do to get money. Even though you have the money, you can't buy what you like. Everybody was in the state of sadness. Finally, they forced us out of the camp when the flood was about to end to go back to our houses that has flood inside. We suffered both inside and outside the camp (**FGD/A Civil servant/Ogboin**).*

CONCLUSION

From the study, resettlement and re-adjustment patterns of flood victims in the studied area revealed that most flood victims are in shock and confusion during flood disasters. They are left with no other option than to evacuate their residences to temporary 'open-room' apartments provided by the government. This invariably suggests that the flood victims' resettlement and re-adjustment patterns are far from thorough.The work of disaster managers before, during and after disasters is known to be very fragmented. Engineers do not usually work and cooperate with health professional and planners. State official and Business executives do not usually work with National Emergency and Management agency (NEMA) officials. Civil defense leaders do not usually team up with educators.

RECOMMENDATIONS

i.   The issue of flooding across board is generally regarded as an uncontrolled force of the physical environment that has posed critical problem to the normal functioning of the socio-cultural environment. In the view of the findings of the study, the government and some relevant NGOs in the country need to take urgent and drastic measures in providing for adequate social welfare for flood victims across the board so as to cushion the effect of ravaging floods on the people affected. In line with this, those who are directly affected by flood should be rehabilitated, provided with relief materials as well as compensated adequately.

ii.   In rehabilitating flood victims, free emergency health services should be provided on regular basis to those directly or indirectly affected by the flood. This would invariably help to reduce the potential mortality the flood disaster may pose in the nearest future to the communities affected by the flooding.

iii.   The psycho-social effect of the flooding is cataclysmic. In view of this, efforts that will facilitate flood victims 'coping strategies should be made by the government and non-governmental social welfare agencies to provide seldom counseling services to those who are directly or indirectly affected by the flood so as to enable them cope with the traumatic situation of the flood disaster.

iv.   To ensure the suitability of resettlement of flood victims, it is necessary for professionally qualified experts to identify new settlements with diverse considerations, including socio-economic and other factors such as biophysical and topography.

v.   In resettling flood victims, the carrying capacity of the landscape and existing facilities should be considered to avoid over-crowding and over-running of facilities.

vi.   Flood mitigation plans should be put in place in communities in flood plains and flooding should be declared as an annual national disaster wherever it occurs in Nigeria;

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