

**COPING STRATEGIES OF VULNERABLE PEOPLE IN FLOOD DISASTER PRONE AREAS IN  
IBADAN METROPOLITAN CITY OF OYO STATE**

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**ABSTRACT**

*The study was carried out to investigate disaster coping strategies that disaster victims employed in view of natural disaster that is prevalent today with insufficient government relief materials. Multi-stage sampling technique was used. First, purposive sampling method was used to select five communities that were worst hit by last flood disaster in Ibadan in August 26th, 2011 according to newspaper ([www.momentng.com](http://www.momentng.com)). Using simple random sampling method, two of these five communities were selected in Ibadan, Oyo state. Purposive sampling method was used to select sixty respondents that were interviewed but with ninety five percent return rates (57 respondents). Results indicate that the coping strategies that were best employed by vulnerable groups in the study area include use of past personal saving (mean = 1.5789), help from other members in the community (mean = 1.3684) and assistance from religious associations (mean = 1.2281). There was a relationship between being a member of an association and disaster coping strategy ( $X^2$ -value = 11.481) at 0.05 significant levels. It was found out that there was a significant relationship between constraints faced by the respondents and coping strategies they employed ( $r$ -value = -0.865) at 0.05 levels of significance. It was recommended that formation of useful association should be encouraged among community people with the help of community development agencies and local leaders. Government should intensify their effort in responding to the needs of the vulnerable people when disaster strikes.*

**Keywords:** Flood, disaster, Ibadan, coping strategies and vulnerable people.

**INTRODUCTION**

**Background information**

The increasing threat of disasters are changing and deepening the risks already faced by poor and vulnerable people in rural areas. Vulnerability is the presence of unsafe conditions, which negatively affect people's capacity to cope with the damage. This has profound implications for the security of their livelihoods and for their welfare. There are clear overlaps between poverty and disaster risk, with poverty reduction policy/planning and disasters each potentially impacting on the other. Hazard impacts at microeconomic (household livelihoods and human development) and macroeconomic levels - with both short term and longer-term effects on economic growth, development and poverty reduction - can increase risk and susceptibility to further disaster risk, exacerbating and creating poverty, and undermining overall efforts to meet the Millennium Development Goals. Disasters are events, man-

made or natural, sudden or progressive, causing widespread human, material, or environmental losses, which exceed the ability of the affected community to cope using its own resources. Coping means the managing of resources in difficult situations. It includes finding ways to solve problems, to handle stress or to develop defence mechanisms. Flood disaster is now a global concern, coupled with the effects of climate change that has increased the rate of melting of polar ice which usually lead to increase in ocean level, as in the case in India (NATCOM, 2004) and some other countries in the colder regions of the world.

In countries that are not extremely cold as in the case of Nigeria, flood disaster is a chestnut as people living in disaster prone regions of the country are subject to variety of risks concerning their livelihoods. The risks arise mostly because of the dependence of the majority of the population in these countries on climate sensitive factors for their livelihoods. The poor in developing countries are

more vulnerable to these disasters due to less favourable economic, social and institutional conditions. Predicted increase in frequency and intensity of floods and droughts are likely to have unfavorable impacts on the occupational structure, food security, health, social infrastructure etc. of the hotspots (Roy et. al., 2005). In Nigeria, Oyo State in particular, as the metropolitan area of Ibadan continues to witness flood disasters from time to time, people and their livelihood are affected. Of recent, residents of Ibadan, the Oyo State capital, relate their harrowing experiences in tears as they recount their losses in the Friday August 26th, 2011 flood disaster.

#### **Statement of research problem**

Environmental studies had been carried out in Ibadan metropolis with little or no attention given to disaster coping strategies, such as the one carried out on people's attitude towards the environment (Ojedokun, 2010) and a paper that bothered on poorly managed urbanization and flood prone areas in Ibadan metropolis (Tomori, 2001). There have been repeated occurrences of flood in Oyo State particularly in Ibadan both in smaller and larger scales, during which many lost their family members, properties, buildings, crops and livestock (<http://www.momentng.com>). Over the years Nigerians have had to rely on share luck and providence to save them from disasters with little or no help coming from rescue agencies which lacks adequate capacity to intervene in such difficult moments as in the case some victims in August 26th, 2011 flood disaster. Due to governmental bureaucracy and red tapism, government assistance most of the time is not usually automatic, lasting and sufficient while affected people need immediate, adequate and lasting assistance. This makes such ones to embark on distress migration (Adger, 1996). The study was

conducted to analyse strategies employed by the victims and useful suggestions were brought which would be of assistance not only to the people living in that area but to the entire people who may find themselves in disasters. The paper also attempted to understand the various constraints faced by households living in disaster prone (flood affected) regions of Oyo State. The relationship between household personal characteristics, constraints faced and choice of coping strategies employed were also examined. The study provided answers to the following research questions:

- (i) What are the personal characteristics of residents in the area of study area?
- (ii) What are the coping strategies employed by flood disaster victims?
- (iii) What are the constraints faced in employing disaster coping strategies?

#### **Objectives of the study**

The general objective of the study is to analyse the coping strategies of people living in flood prone areas of Ibadan metropolitan city of Oyo state. The study was specifically designed to:

- (i) identify household personal characteristics that influence their disaster coping strategies;
- (ii) identify coping strategies employed by flood disaster victims living in the study area;
- (iii) identify constraints faced in employing disaster coping strategies.

#### **Hypotheses of the study**

In order to achieve the set objectives, the following hypotheses were tested:

- H<sub>0</sub>1: There is no significant relationship between personal characteristics and disaster coping strategies employed by people in the study area.
- H<sub>0</sub>2: There is no significant relationship between constraints faced and disaster coping

strategies employed by people in the study area.

### **Significance of the study**

In view of global concern on disaster and its effects on people vulnerability and poverty, it is imperative to identify and analyse useful coping strategies that households use to augment insufficient and non lasting relief materials from the government. There have been repeated occurrences of floods In Ibadan. Though, studies had been carried out on the causes of flood in Ibadan with little or no attention given to strategies adopted by people to cope so as to be less dependent or independent on government.

### **METHODOLOGY**

Oyo State is an inland state. Oyo State was created in February, 1976 and covers a total of 27,249 square kilometres of land mass, in south-western Nigeria, it is surrounded by Ogun, Kwara, Republic of Benin and Osun State with its capital at Ibadan. There are eleven (11) Local Governments in Ibadan (National Population Commission, 2007). The population of the study was the householders residing in the areas affected by the flood disaster. Multi-stage sampling technique was used, although different places felt the impact of August 26<sup>th</sup>, 2011 flood disaster but newspaper confirmed that areas like Odo-Ona, Agbowo, Apete, Olunloyo, Oluyole were the worst hit ([www.momentng.com](http://www.momentng.com)). As such, these areas were purposively selected.

Forty percent of these communities were randomly selected, that is, Odo-ona in south-west L.G.A. and Olunloyo in Ona-Ara L.G.A. In each community, thirty respondents that were affected were purposively selected and interviewed making a total of sixty respondents but only fifty seven respondents, that is, twenty nine from Odo-Ona and

twenty eight from Olunloyo gave complete responses that could be analyzed. Disaster coping strategies which were in relation to the coping strategies used by different researchers who had worked on ways of coping with food and livelihood insecurity as well as climate change (Adger, 1999) were measured using 3-point Likert-type scale. Data collected were analysed with frequency, percentages, means, chi-square and correlation. Focus Group Discussion (FGD) was held with eight household heads in Odo-ona community and In-depth Interview (IDI) conducted with one of the community leaders in Odo-ona.

### **RESULTS AND DISCUSSION**

#### **Result of focus group discussion**

Flood disaster victims got most of their assistance from relatives, neighbours, associations and use of personal savings. This agrees with FAO (2003) that bothers on roles of social capital as a way of reducing disaster risk. Reasons given for the flood disaster include mode of building houses, indiscriminate dumping of refuse, too much rainfall and lack of proper drainage; it was said that Eleyele dam that was overfull also contributed greatly to the flood disaster.

#### **Result of in-depth interview**

Information was given that twenty thousand naira was given to each of those victims that could stay for about two weeks in public school where they were accommodated temporarily excluding those victims that could not stay in the crowded accommodation more especially the elderly ones. It was said that a mat and a blanket were given to some households by the Red Cross Society after about one month after the flood disaster took place, after which victims had used their personal money and other financial assistance from relatives and association to acquire basic necessities.

**Table 1: Distribution respondents' characteristics in the study area**

Variables	Frequency	Percentage
<b>Sex</b>		
Male	49	86.0
Female	8	14.0
<b>Marital status</b>		
Single	6	10.5
Married	45	78.9
Widowed	5	8.8
Separate	1	1.8
<b>Age categories</b> (Mean = 50.12 Standard deviation = 10.69)		
Young age (28-50 )	26	45.6
Old age (51-75)	31	54.4
<b>Member of an association</b>		
Yes	42	73.7
No	15	26.3
<b>Total</b>	<b>57</b>	<b>100</b>

Source: Field survey, 2012

As shown in the Table 1 above, forty nine (86%) were male while eight (14%) were female. This showed that majority of the respondents were male. The majority of the respondents interviewed in the study area were married people (78.9%), 10.5% were single and 8.8% were widowed. There is likelihood that marital status affected coping strategies employed, that was the reason why relationship was tested between coping strategies and marital status in this study. This is because those married are likely to have more social capital or relations that could render assistance during or after disaster. Majority belongs to one association or the other (73.3%) while only 26.3% did not belong to an association. Much has been written about the value of enhancing and protecting social capital (friendships, kinships, patron-client

relationships etc.) as a way of reducing disaster risk (FAO 2003; UNDP 2004).

About fifty four percent (54. 4%) of respondents were within old age range while 45.6% were within young age range. Age might likely influence people coping strategies, for instance, it was said by some elderly people during the interview that only the young and agile ones who could be on queue struggling for the insufficient relief material brought by the government got it most.

**Table 2: Distribution of respondents based on the relationship between coping strategies and constraints faced**

	Strategy category				Total	
	High		Low			
Constraints category	F	%	F	%	F	%
<b>High</b>	1	1.8	25	43.9	26	45.6
<b>Low</b>	28	49.1	3	5.3	31	54.4
<b>Total</b>	<b>29</b>	<b>50.9</b>	<b>28</b>	<b>49.1</b>	<b>57</b>	<b>100.0</b>

Source: Field survey, 2012

The table above shows that the constraints affected the use of strategies, that is, those respondents with much/high constraints could not use more strategies unlike those with little/low constraints. For instance, majority of respondents under high constraint (43.9%) out of 45.6% fell under low strategy. On the other hand, 49.1% of respondents under low constraint out of 54.4% fell under high strategy.

**Household disaster coping strategies****Table 3: Distribution of respondents by the use of disaster coping strategies**

Flood disaster coping strategies	Not used		Partially used		Fully used		Mean	Rank
	F	%	F	%	F	%		
Help from other members in the community	7	12.3	22	38.6	28	49.1	1.3684	2 <sup>nd</sup>
Borrowing/ Taking of loans	39	68.4	18	31.6	0	0.0	0.3158	7th
Past savings	10	17.5	4	7.0	43	75.4	1.5789	1st
Receiving Monetary Transfers (from friends and relatives)	27	47.4	27	47.4	3	5.3	0.5789	6th
Assistance from my religious association	20	35.1	4	7.0	33	57.9	1.2281	3rd
Assistance from cooperative society	29	50.9	3	5.3	25	43.9	0.9298	5th
Relief/assistance from the government	40	70.2	17	29.8	0	0.0	0.2982	8th
Selling of assets/properties	57	100	0	0.0	0	0.0	0.0000	9th
Migration/Evacuation	25	43.7	0	0.0	32	56.1	1.1228	4 <sup>th</sup>

Source: Field survey, 2012

This Table 3 above shows the frequency, percentage and means of disaster coping strategies. The higher the mean of a disaster coping strategy the greater the use of such a strategy. As it can be seen on the table, the best used strategy was past personal savings with a mean of 1.5789, followed by the help from the community with mean of 1.3684; this was followed by assistance from religious association with a mean of 1.2281. These were in line with what was said during IDI. The fourth strategy mostly employed was migration with a mean of 1.1228, fifth was assistance from cooperative society with a mean of 0.9298, sixth was receiving of monetary transfers with a mean of

0.5789, seventh was borrowing/ taking of loans with a mean of 0.3158, eighth was relief or assistance from government with a mean of 0.2982 and the least used disaster coping strategy was selling of asset or properties with a mean of 0.0000. For the fact that help from the community, religious and cooperative associations were among the best used strategies; it shows that social capital is of value. Much has been written about the value of enhancing and protecting social capital (friendships, kinships, patron-client relationships etc.) as a way of reducing disaster risk (FAO 2003; UNDP 2004).

**Constraints to the use of disaster coping strategies**

**Table 4: Intensity of constraints faced based on their means**

Constraints to the use of disaster coping strategies	Sum of score	Mean	Rank
Delay in bringing government relief materials	80.00	1.4035	4th
Insufficient government relief materials	78.00	1.3684	5th
Poor communication network	14.00	.2456	8th
Little or no assistance from the neighbours	90.00	1.5789	3rd
Lack of access to loan from bank	23.00	.4035	7th
Lack of association members to help	71.00	1.2456	6th
Problem of little or no savings	99.00	1.7368	2nd
Lack of assistance from government	120.00	2.1053	1st

Source: Field survey, 2012

The higher the sums of scores and means of constraints based on 5-points likert scale the higher the intensity of constraints to the use of disaster coping strategies. It could be seen from the table above that the most intense constraint was lack of assistance from government followed by the problem of little or no saving, while the least constraint was poor communication network. The means even showed the importance that respondents attached to the strategies, that they used a strategy most did not mean that respondents had enough of that strategy as in the case of use of past savings as a strategy and problem of little or no saving as a constraint.

**Testing of hypotheses**

This segment discusses the relationship between the independent and dependent variables. The dependent variable is disaster coping strategies while the independent variables include personal characteristics such as sex, marital status, membership in an association and age; constraints to using or employing coping strategies were also another independent variable.

**Hypothesis 1**

H<sub>0</sub>1: There is no significant relationship between selected personal characteristics and respondents' disaster coping strategies.

**Table 5a: Chi-square (X<sup>2</sup>) values for variable relationship**

Personal characteristics	df	Chi-value	p-Value	Decision
<b>Sex</b>	1	0.666	0.414	NS
<b>Marital status</b>	4	6.740	0.150	NS
<b>Association membership</b>	1	11.481	.001	S

Source: Field survey, 2012

S = significant

NS = not significant

**Table 5b: Pearson correlation (r) values for age and strategy score**

Personal characteristics	r-value	p-value	Decision
<b>Age</b>	0.029	0.832	Not significant

Source: Field survey, 2012

Table 5a above shows that sex does not have significant relationship with disaster coping strategies because its p-value of 0.414 was greater than 0.05 significant levels, the same case is applicable to marital status with p-value of 0.150 that was greater than 0.05 significant levels as such, null hypothesis was accepted. On the other hand there was a significant relationship between being a member of an association and disaster coping

strategy because it had p-value of 0.001 that was less than 0.05 significant level, so the null hypothesis was rejected. With this, formation of useful associations should be encouraged among community people with the help of community development agencies and local leaders (Anyanwu, 1999). It is also in line with the Watchtower (2011) which discussed four steps that can be taken in coping with disaster of which the fourth one is to receive help from ones association such as religious association.

In the case of Table 5b that shows the relationship between age and disaster coping strategies, the p-value of 0.832 was greater than 0.05 levels of significance as such null hypothesis was accepted, that is, there is no relationship between age and disaster coping strategies.

**Hypothesis 2**

H<sub>02</sub>: there is no significant relationship between constraints faced and disaster coping strategies employed.

**Table 6:Correlation between respondents’ disaster coping strategies and constraints faced**

Variables	r-value	p-Value	Decision
Disaster coping strategies and constraint	-0.865	0.000	Significant

Source: Field survey, 2012

Table 6 shows that there was a relationship between constraints faced by the respondents and coping strategies they employed because the p-value of 0.000 was far less than 0.05 levels of significance. The null hypothesis was rejected. The negative relationship between constraints and strategies shows that the higher the strategies used the lower the constraints faced.

**CONCLUSION AND RECOMMENDATIONS**

In relation to the findings from this study, it could be concluded that:

- (i) The strategies employed mostly in coping with disaster include use of past savings followed by the help from the community, assistance from associations such as religious and cooperative.
- (ii) Though government rendered assistance when disasters take place, it was not enough as shown by the responses of the respondents.
- (iii) Being a male or female, married or not married, old or young does not really influence one’s disaster coping strategies.
- (iv) There is relationship between association membership and disaster coping strategies in the study area. Those who were in one association or the other were more able to cope in comparison.

Based on the findings of the study it was recommended that:

- (i) Having found that membership of associations really help to cope with disaster, formation of useful association should be encouraged among community people with the help of community development agencies and local leaders.
- (ii) Government should intensify effort in responding to the needs of the vulnerable people when disaster strikes.
- (iii) Government either at the local, state or federal level should do well in carrying out survey concerning disaster prone areas and warn people involved to move away from such areas. For instance, a little bit more than the half of respondents moved or migrated away from affected areas before disaster fell.

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