

INFORMATION SOURCES, CAUSES AND RESPONSES TO FLOODING OCCURRING IN SOME SELECTED COMMUNITIES OF MAIDUGURI METROPOLITAN COUNCIL AND JERE, BORNO STATE

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ABSTRACT

*F*looding has been negatively impacted communities recently due to the rising level of Climate change consequential from diverse human activities. It is one of the environmental crises that lead to waste of properties in millions in Nigeria. Information services provision has great roles to play in decision making if the people leaving in flood affecting communities. Providing timely and the right information to the people can help influence their decision to escape the damages caused by the flood. This study was aimed at identifying the information sources available to households of Gwange (III) and Jiddari Communities, to ascertain the causes of flooding in the communities and to find out what measures they take to respond to flood in

Introduction:

Flooding is one of the commonest environmental disaster known to man in history. It is simply a result of overflowing of water into an area of land that is usually dry. In Nigeria, flooding has undoubtedly become an annual environmental disaster event. The continuous occurrences and reoccurrence of flooding in Nigeria and the globe at large have become an issue of concern to nations and researchers (Aderogba, 2012; Harris, 2012; Nwigwe & Emberga 2014). Maiduguri Metropolis and some part of Jere Local

the communities. The study, therefore, recommends that there is the need for the state government, CBO's, NGO's and other professional bodies to work in partnership to strategize and enforce environmental protection measures, implement a continual community-based and environmental-centred information services through the radios, community leaders and other agencies to provide timely information on flooding occurrences.

Keywords: *Climate Change, Flooding, Information Sources,*

Government has witnessed floods in recent years with a continuous annual occurrence, threatening the sustainability of human settlements (Nwigwe & Emberga 2014), and socio-economic activities as against the wide hydroclimatic believe which negates the occurrence of floods in Maiduguri and its environs (John, 1996). The city is reported to suffer flood as the results of high average precipitations during the rainy season (pluvial floods) (Haruna & Dami, 2011; Nwigwe & Emberga 2014). Floods can occur when the antecedent moisture condition (AMC) of an area is favourable even if the rate of precipitation is low and/or short in duration (Verma & Agarwal, 2008; Harris, 2012; Nwigwe & Emberga 2014).

The adverse effects of disasters such as flooding as outlined by the International Strategy for Disaster Reduction Disasters (UNISDR) include the threat to human life and dignity, driving vulnerable people into impoverishment, degrading the environment, and challenging efforts for sustainable development of communities (UNISDR, 2020). Studies have shown that residents, residing in poor areas, are more vulnerable to the impact of natural disasters, like flooding (Cui *et al.*, 2018; Xu *et al.*, 2019; Dingde *et al.*, 2019), and responses to natural disaster are guided by one's perception to the risk attached with the disaster in terms of occurrence, duration, the extent of damage and potential threat (Dingde *et al.*, 2019).

Aim of the study

The study is aimed at assessing information sources and perceptions of residents on the causes of flooding in some selected communities of Jere and Maiduguri Metropolitan Council, Borno State.

Problem Statement

Global communities have been affected greatly by the Covid-19 this year. That notwithstanding, the people in Maiduguri have been affected by the influx of people as a result of protracted insurgent activities in other local governments of the State resulting to overpopulation, then come the recession, increase in poverty and lower coping mechanisms and livelihood means reduced. Above all flood has been affecting the people adding to an increase displacement rate. Thus, making the issues quadrupled. The need to provide information to the people to influence daily decision making would help enhance their capacities to respond effectively to flooding issues in the community hence the need for this research.

Objective of the Study

The objectives of the study are to:

1. Identify the sources of information regarding flooding available to some selected communities of Jere and MMC
2. Identify the causes of flooding in some selected communities of Jere and MMC
3. Ascertain the perception of some selected communities of Jere and MMC towards flooding occurring in the communities
4. Examine the response to flooding occurring in some selected communities of Jere and MMC.

Conceptual Background

When a community is confronted with environmental disaster, residents are compelled to make behavioural decisions. Studies indicate that making behavioural decisions such as relocation, preparation to face the disaster through infrastructural capacity development, risk management development skills are closely linked to the community's or individual's risk perception (Cui *et al.*, 2018; Xu *et al.*, 2019; Dingde *et al.*, 2019). Individuals generally formed their perception from the available information at their disposal (AlQahtany and Abubakar, 2019). Risk perception is simply the community's views, feelings, attitudes and judgments, including their cultural values and believes regarding a particular risk (Brown et al., 2018).

Several factors are reported to affect community's perception to risks such as socio-economic and demographic factors such as age, education, income,

and location (Alshehri *et al.*, 2013; Al-Nammari and Alzaghah, 2015), type, nature and duration of the disaster, and previous experience from the disasters (Ho *et al.*, 2008; Grothmann and Reusswig, 2006). Also, emotions such as fear, and helplessness concerning disaster risks play a vital part in risk perception (Lin *et al.*, 2008).

Disaster risk perception plays a vital role in influencing communities' response to the disasters and their level of readiness and preparedness to employ precautionary measures to reduce or avert the risks associated with the disaster (AlQahtany and Abubakar, 2019). Low-risk perception level might lead to the inadequate ability of the community to develop response mechanisms which could cause a high level of damages and losses, as against the high-risk perception which might enable the community to be prepared and develop prevention and risk reduction mechanism leading to a higher resilient ability with little or no damage to the community. Raising communities' level of awareness of disaster risks can influence their attitudes, giving them the needed response and risk management skills to be more proactive in disaster risk management and preparedness (Harris, 2012; AlQahtany and Abubakar, 2019).

Methodology

Quantitative Methods was adopted for this study using a Descriptive Survey Design where questionnaires were developed and shared to selected households using purposive sampling techniques for respondents in Gwange and communities of MMC and Jere LGA. One hundred and fifty (150) Questionnaires were administered to the households as respondents and 122 were retrieved and used for this study. Data were analyzed using SPSS where descriptive statistics of frequency and percentages were used and discussion was done using tables and graphs for easy understanding.

Results and Discussions

SECTION A (*DEMOGRAPHIC DATA OF RESPONDENTS*)

Gender

S/N	Items	Frequency	Percentages
1	Male	286	74.3
2	Female	99	25.7
Total		385	100

The Table above, revealed that 74.3% (286) of the respondents were male while the remaining 25.7% (103) respondents were female.

Residential Local Government Area

S/N	Communities	Frequency	Percentages
1	Jere	208	54.1
2	MMC	177	45.9
Total		385	100

The Table above, indicates that out of the total number of 385 (100%) of the respondents, 208 (54.1%) were from Jere LGA while 177 (45.96%) were from Maiduguri Metropolitan Council (MMC) of Borno State.

SECTION B: AWARENESS, SOURCES OF INFORMATION ON FLOODING

Have you ever experienced flooding

S/N	Experiences of flood	Frequency	Percentages
1	Yes	233	60.5
2	No	152	39.5
Total		385	100

The table above, revealed that majority of the respondents 233 (60.5%) experienced one form of floods or the other in the town while 152 (39.5%) did not experience any form of flood in their stay in Maiduguri and its environs. This agrees with (Odihi, 1996; Bwala and Abdulwaheed, 2015; Jimme *et al*, 2016) in that flooding is an annual occurring disaster in the town and most of the inhabitants of the town has witnessed floods in its different degrees and forms (Punch Newspaper, 9th July, 2016; Premium Times 21st August, 2019).

What are the information sources available to you about flooding your community?

S/N	Items	Frequency	Percentages
1	Social Media	115	29.9
2	Radio Broadcast	193	50.1
3	Television Broadcast	214	55.6
4	Print Media (Newspapers)	137	35.6
5	Bulletins	47	12.2
6	Instant Messaging Services	15	3.9

7	Government Community Based Awareness Campaigns	200	52.0
8	NGO's IEC Materials	202	52.5
9	Religious Leaders	240	62.3
10	Traditional Leaders	251	65.2
11	Family and Friends	348	90.4

The Table above revealed the sources of information available to residents of Maiduguri and its environs on flood. The result indicates that 348 (90.4%) were informed by their families and friends, Traditional Leaders 251 (65.2%), Religious leaders 240 (63.2), Television Broadcast 214 (55.6%), NGO's IEC materials 202 (52.5%), Government Community Based Awareness Campaigns 200 (52.0), Radio Broadcast 193 (50.1), Print Media 137 (35.6), Social Media 115 (29.9%), Bulletins 47 (12.2%) and Instant Messaging Services 15 (3.9%).

SECTION B: CAUSES OF FLOODING

S/N	Items	Frequency	Percentages
1	Heavy Rainfall	332	86.2
2	Overflowing of Dam	19	4.9
3	Overflowing of River	19	4.9
4	Blockages of Drainages	311	80.8
5	Building on waterways	232	60.3
6	Lack of proper Drainages systems	201	52.2
7	Improper town Planning	210	54.5
8	Indiscriminate dumping of Refuse	349	90.6

The summary of the findings presented in the Table above indicated the causes of flooding in Maiduguri and its environs. It was revealed that the major cause of flooding in the town is Indiscriminate dumping of refused 349 (90.6%) then Heavy Rainfall 332 (86.2%), Blockage of Drainages 311 (80.8%), Building on Waterways 232 (60.3%), Improper town planning 210 (54.4%), Poor Drainage Systems 201 (52.2%), Overflowing of Dams and Rivers accounting for 19 (4.9%) of the total responses each respectively. The Study agrees with the findings of (Olawuni *et al*, 2015; Bwala and Abdulwaheed, 2015; Jimme *et al*, 2016) in that indiscriminate

dumping of refuse the major cause of floods in major urban cities in Nigeria, (Olawuni *et al*, 2015) and also attributed the major causes of flooding to absence of drainage systems and topography of the area. The Indiscrimate dumping of refuse is a major environmental concern in Maiduguri (Mohammed *et al*, 2012; Mukhtar and Akan, 2018) which block drainage systems and whenever there is heavy rainfall more than it can percolates, the surface runoffs overflows within the town into dry land areas causing serious damage to bio-physical and socio-economic environment.

SECTION C: RESPONSE TO FLOODING

S/N	Items	Frequency	Percentages
1	Clearing Blocked drainages	136	35.3
2	Landfilling of Waterlogged Areas	154	40.0
3	Creating water channels	232	60.3
4	Creating Buffer zone	294	76.4
5	Relocating to Safer Areas	118	30.6

The Responses of the residents to flooding events in the study area as revealed in the above Table, indicates that majority of the respondents opted to Create a Buffer Zone 294 (76.4%), then Creating Water channels (60.3%), Landfilling of waterlogged areas 154 (40%), Clearing of Blocked drainages 136 (35.3%) and Relocating to a Safer Area 118 (30.6%).

The response to flooding in the study area is surprising as one will expect that since the major cause of flood is the indiscriminate dumping of refuse, a mitigation measure should have been clearing the blocked drainages but the unanticipated response can be attributed to the individuals behaviour and approaches towards the environment. Everyone is trying to “guide his backyard”, this might be reason why flood continues to be an annual occurring environmental disaster in the study area.

Conclusions

Since the causes of the incessant flooding in Nigerian cities border on poor physical planning. there is the need for those in charge of physical planning and policy formulation in Nigeria makers to understand that natural disasters such as floods have destructive potential. Therefore, the need for appropriate planning and forecast. For Nigeria to achieve improvement in

environmental management for sustainable growth and development, there is a need to redouble efforts to scale-up flood control and management, climate change mitigation and adaptation initiatives. Environmental Education is necessary and it is now a must. At every level of education; on radio, television, newspapers and magazines; and in every public forum, these must be stressed; and development efforts should not be relented either.

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QUESTIONNAIRE

SECTION A (DEMOGRAPHIC DATA OF RESPONDENTS)

1. Gender

A. Male B. Female

2. Residential Local Government Area

A. Jere B. MMC

SECTION B: AWARENESS, SOURCES OF INFORMATION ON FLOODING

3. Have you ever experienced flooding in your community?

A. Yes B. NO

4. What are the information sources available to you about flooding your community?
 - a. Social media
 - b. Radio broadcast
 - c. Television broadcast
 - d. Print media (Newspaper)
 - e. Bulletin
 - f. Instant Messaging Services
 - g. Government agencies' community-based awareness campaigns
 - h. NGO's IEC materials
 - i. Religious Leaders
 - j. Traditional Leaders
 - k. Family and Friends
 - l. Others, Please Specify_____

SECTION B: CAUSES OF FLOODING

5. What is (are) the cause(s) of flooding in your area?
 - a. Heavy rainfall
 - b. Overflowing dams
 - c. Overflowing of river
 - d. Blockage drainages
 - e. Building on waterways
 - f. Lack of proper drainages system
 - g. Improper town planning
 - h. Indiscriminate dumping of refuse
 - i. Others _____

SECTION C: RESPONSE TO FLOODING

6. What do you do to respond to flooding occurring in your communities?
 - a. Clearing blocked drainages
 - b. Landfilling of waterlogged areas
 - c. Creating water channels for easy water passage
 - d. Creating a buffer zone
 - e. Relocating to a safer area
 - f. Others _____