

Appraisal of the Role of Environmental Management Agencies in Flood Risk Management in Rural and Urban Communities in Kogi State, Nigeria.

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ABSTRACT

In Nigeria, flooding has become a major annual disaster exacerbated by climate change and other related factors. This study aimed at identifying the role of environmental management agencies in flood risk management in Kogi State. The study was conducted in eighteen flood prone communities from nine Local Government Areas in Kogi State (Lokoja, Ajaokuta, Ibaji, Idah, Ofu, Bassa, Igalamela, Odolu and Kogi). A multistage sampling technique was used to select six hundred and ten (610) respondents for the study. The study used questionnaire and in-depth interviews in collecting the data. The data obtained was summarized using descriptive statistics and narrative analysis. The findings revealed the stages of flood risks management as preparedness, response and recovery. The results show that 70.5% of rural communities indicated non-involvement of environmental management agencies in most stages of flood risk management in their communities, while 21.9% indicated activities of the agencies in response stage. From the urban communities, 44.2% reported the roles of the agencies as response stage, with 29.2% in preparedness stage. In terms of response, 83.8% of the rural communities reported non-response activities. For recovery activities, 65.0% of the urban communities and 96.2% of the rural communities show lack of recovery activities of environmental management agencies. The findings indicate inadequacy in preparedness, response and recovery activities of the agencies in the flood vulnerable communities, especially the rural communities. Major challenges of the agencies were inadequate human resources and equipment, lack of funds and remoteness of some vulnerable communities. The study recommends that the agencies strengthen their preparedness and response, while government at all levels provide adequate funds and human resources for the agencies.

Keywords: Environmental Management Agencies, Flood Risk Management, Preparedness.

1. INTRODUCTION

Flood events like other natural hazards have become a major environmental challenge across the globe. In most countries of the world, flooding is a major disaster with increased frequency of occurrence, wider area coverage and highest impact amongst all

forms of disasters (Jinadu, 2015). In Nigeria, flooding is a major annual disaster. The flood disasters witnessed in Nigeria between 2010 and 2012 were phenomenal and had disastrous impacts on human lives and properties (Jinadu, 2015). Other isolated flood disasters recorded in Nigeria between 2013 and 2015 had wreaked havoc on

communities and brought about economic losses (Jinadu, 2015). According to National Disaster Management Framework (2010), Community Based Organizations (CBOs), Faith Based Organizations (FBOs), and Non-Governmental Organizations (NGOs) are the first responders to any disaster in vulnerable communities. The effort of this community emergency management structure is complimented by Emergency Management Volunteers (EMV) and if more resources are needed, State Emergency Management Agency (SEMA) and NEMA can bring in additional resources.

The Nigerian Government and International donor agencies like UNICEF, UN and EU as well as non-governmental organizations have committed a lot of resources to flood disaster management in the country. However, much progress has not been made in the areas of flood disaster risk reduction, recovery and community resilience (Jinadu, 2015). Several studies such as (Kelly, 2001; ADPC, 2007; WMO, 2008; Odedeji *et al.*, 2012; Kingsley *et al.*, 2013; Anunobi 2014; Obeta 2014; Aderoju *et al.*, 2014; Augustine *et al.*, 2015; Liman *et al.*, 2015) have been conducted on flood vulnerability and flood management. However, it has become apparent that top-down approaches to disaster risk management while ignoring the local capacities and resources have failed to address the specific local needs of vulnerable communities. In response to the limitations of this top-down methodology, the community-based disaster management is seen as an alternative approach (ADPC, 2007).

The general objective of this study is an appraisal of the role of environmental management agencies in flood risk management in rural and urban communities in Kogi State, Nigeria. The specific objectives are to identify the stages of involvement, preparedness, responsiveness and the recovery activities of environmental management agencies in the flood-prone

rural and urban communities in the study area.

2. MATERIALS AND METHODS

2.1 Study Area

Kogi state is located between Latitudes 7° 30'N - 7° 45'N and Longitudes 6° 41'E - 6° 45'E, within the lower Niger- Benue trough in Central Nigeria (Figure 1). The state has a total land area of 29,833km² and shares boundaries with the Federal Capital Territory to the North, Nassarawa State to the Northeast, Benue State to the South, Enugu State to the Southeast, Anambra State to the South, Edo State to the Southwest, Ondo and Ekiti to the West, Niger State to the North and Kwara State to the Northwest. It is popularly called the confluence state because of the confluence of River Niger and River Benue at its capital, Lokoja. The land rises from about 300m along the Niger-Benue confluence to about 600m above sea level. Dominant land forms in the state are the Agbaja plateau and Okoroagbo hills at Ogidi in Ijumu Local Government Area. The two major rivers and their tributaries flow through several communities in the study area and annually overflow their banks to flood the communities (SEMA, 2012). Kogi State has a mean temperature range between 24°C to 34°C with a relative humidity of 70% in dry months and 90% in wet months. Annual rainfall is between 1,100mm and 1,300mm, between April to October. Kogi State has a population of 3,595,789 persons (NPC, 2006). Agriculture is the main stay of the economy. Mineral resources in the state include coal, limestone, iron and tin.

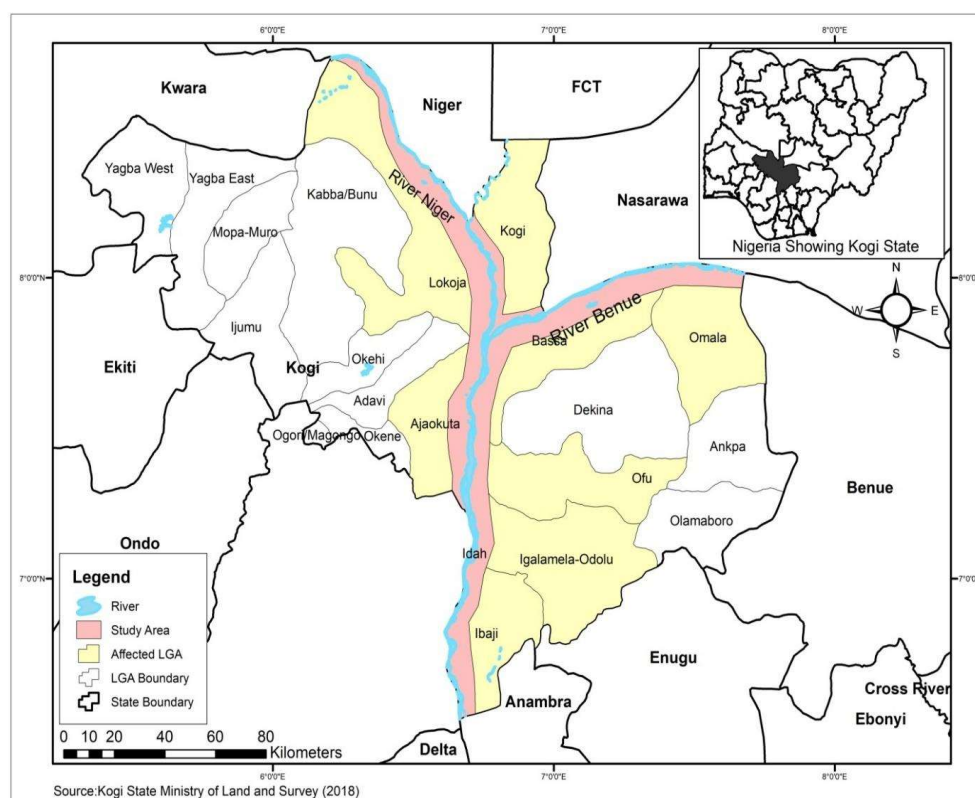


Figure 1: Geographical Location of the Study Area
Source: Kogi State Ministry of Lands and Survey (2019)

2.2 Methodology

Following a reconnaissance survey of the study area, a multistage sampling technique was adopted for the study. The information on the population of 8,451 persons affected by floods in the flood prone communities in Kogi State was obtained from SEMA, LEMC and the communities. Using Sample Size Table of Research Advisor (2006) at 99% confidence level, a sample of six hundred and ten (610) respondents was drawn from the population. A Structured questionnaire was administered to purposively selected respondents from the communities in the nine Local Government Areas (Lokoja, Ajaokuta, Ibaji, Idah, Ofu, Bassa, Igalamela, Odolu and Kogi).

In-depth-interviews were also held with SEMA officials in the state. Data obtained

from the study was summarized using descriptive statistics, while the in-depth-interviews were transcribed and interpreted using narrative analysis.

4. RESULTS AND DISCUSSIONS

4.1 Stages of Involvement of Environmental Management Agencies in Flood Risk Management

The result of analysis of the stages of involvement of environmental management agencies in flood risk management is presented in Table 1.

The result shows that majority (70.5%) of the respondents in rural communities indicated

Table 1: Stages of Involvement of Environmental Management Agencies

Stages of Environmental Management Agencies Engagement in Flood Management	Response		Location		
			Urban	Rural	
Preparedness	F		70	27	
	%		29.2	7.3	
Response	F		106	81	
	%		44.2	21.9	
Recovery	F		23	1	
	%		9.6	0.3	
All of the above	F		12	0	
	%		5.0	0.0	
Not at all	F		29	261	
	%		12.1	70.5	
Total	F		240	370	610
	%		100	100	100

Source: Field Survey, 2018

that environmental management agencies were not involved in most stages of flood risk management in the communities. Flood preparedness, response and recovery are done by the communities either through community-based organizations or individual efforts. Post Disaster Needs Assessment (PDNA, 2013), supports this assertion that most flood management activities are carried out by the flood vulnerable communities.

4.2 Preparedness of Environmental Management Agencies in Flood Risk Management

The preparedness of environmental management agencies in flood risk management is presented in Table 2.

The results show that 89.2% in rural communities such as Ajaokuta native village, Shintako, Ichala, Ogbogba, Ejule-Ojebe, Olukudu-Ibaji, Bagana, Otutubatu-Manejo, Banda and Ugwoda reported that environmental management agencies were not involved in flood risk management preparedness in their communities. This indicates that most rural communities are involved in flood management in their communities with little or no involvement of environmental management agencies. This may be attributed to the fact that most of the rural communities are not easily accessible

and environmental management agencies do not have adequate facilities/ resources to effectively manage flood vulnerable communities during flooding events. The table also shows that 58.3% of the respondents from urban communities such as Adankolo, Cantonment, Koton-Karfe, Onyedega and Itohe receive flood warnings and evacuation alerts while few others indicated that the agency only participated in evacuation of community members before flood disasters. This is supported by PDNA (2013), which have found that environmental management agencies do not play their roles due to funding problems.

The preparedness activities of environmental management agencies enjoyed by the communities are:

- i. Early warning information
- ii. Clearance of drainage and water ways
- iii. Enforcement of evacuation before flooding
- iv. Provision of labor for drainage clearance before rainfall

Table 2: Preparedness of Environmental Management Agencies

Flood Preparedness Role of Environmental Management	Response	Location			
			Urban	Rural	
	Early warning information	F	140	30	
		%	58.3	8.1	
	Organizing and training of community members	F	31	7	
		%	12.9	1.9	
	Evacuation of community members before flood disaster	F	7	3	
		%	2.9	0.8	
	None of the above	F	62	330	
		%	25.8	89.2	
	Total	F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

4.3 Response Activities of Environmental Management Agencies in Flood Risk Management

The response activities of environmental management agencies in flood risk management are presented in Table 3.

rural communities reported that environmental management agencies were not involved in flood disaster response activities in their communities, 6.5% indicated agencies' involvement in drainage clearance and 5.7% involved in evacuation of

Table 3: Response Activities of Environmental Management Agencies in Flood Response

Flood Response Role of Environmental Management Agencies	Response	Location			
		Urban	Rural		
	Evacuation of flood victims	F	96	21	
		%	40.0	5.7	
	Cleaning of drainage and waterways	F	36	24	
		%	15.0	6.5	
	Camping of flood affected victims	F	46	2	
		%	19.2	0.5	
	Supply of relief materials and food	F	13	5	
		%	5.4	1.4	
	All of the above	F	24	7	
		%	10.0	1.9	
	None of the above	F	25	310	
		%	10.4	83.8	
	Total	F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

At the response stage, the environmental management agencies are expected to evacuate flood affected victims, camp such victims in safe areas and supply them with relief materials. This is because the agencies have activities scheduled for particular management stages. The results from the table show that 83.8% of respondents in the

flood victims. However, 40% of the respondents from urban communities such as Adankolo, Cantonment, Koton-Karfe, Onyedega, and Itoke reported that the agencies participate in evacuation of flood victims, 19.2% indicated camping of affected victims, 15% are involved in drainage and

waterways clearance and only 5.4% indicated supply of relief materials.

4.4 Activities of Environmental Management Agencies in Flood Hazard Recovery

The recovery activities of environmental management agencies in flood hazard recovery are presented in Table 4.

activities of environmental management agencies.

In-depth interviews revealed that urban communities such as Adankolo, Cantonment, Nataco, Koton-Karfe, Ugwoda and Itobe benefit from the response activities of environmental management agencies. The research identified rescue and evacuation of

Table 4: Activities of Environmental Management Agencies in Flood Hazard Recovery

Flood Recovery Role of Environmental Management Agencies	Response		Location		
			Urban	Rural	
	Assessment and rebuilding of structures	F	84	14	
		%	35.0	3.8	
	None at all	F	156	356	
		%	65.0	96.2	
	Total	F	240	370	610
		%	100.0	100.0	100.0

Source: Field Survey, 2018

Majority of respondents (96.2%) in rural communities reported that their communities do not enjoy any flood hazard recovery efforts from environmental management agencies. This may be due to inadequate funding of the agencies coupled with the inaccessibility of the rural communities. The result agrees with the assertion of PDNA (2013) that agencies are not adequately funded. The result from the table also indicates that 65% of the respondents from urban communities like Cantonment, Adankolo, Nataco, Koton-Karfe, Onyedega and Itobe reported that the agencies do not play any recovery role in their communities, while 35% reported that environmental management agencies participated in the assessment and rebuilding of flood affected structures in their communities.

In the case of recovery, the findings revealed that urban communities such as Adankolo, Nataco, Ganaja, Koton-Karfe, Adogo, and Itobe and others along Abuja road and within Lokoja tend to benefit from the recovery

flood victims by stakeholders such as police, civil defense, Red Cross and health officials to the prepared camps. The results of the interview also indicate that the flood victims are given relief materials such as food, blankets, clothes and drugs. The respondents revealed that the agencies are only involved in assessments of impacts of flood on the flood prone communities at the recovery stage and provide feedbacks to the state government and National Emergency Management Agencies.

The quotes from respondents are reflected below:

“At the preparedness stage, the agencies notify all stakeholders like Ministries of health, environment, education; National Inland Water Authority (NIWA), Local government, security agencies, media, community leaders and NGO’s.”...Hassan Ayegba - Lokoja

“The agencies also identify higher risk areas, then identify safer places (upland), prepare the identified areas to make them habitable before the occurrence of flood disasters” ...Hassan Ayegba - Lokoja

“The agencies use speed boats from National Inland Water Authority (NIWA) with information gadgets to give early warnings to communities living along the rivers” ...Mr. Okolo-Lokoja

“At the response stage, the agencies notify all stakeholders like ministries of health, environment, education, National Inland Water Authority (NIWA), Local government, security agencies and NGOs to help rescue, transport and give medical care to flood victims” ...Mr. Okolo-Lokoja

5. CONCLUSION AND RECOMMENDATIONS

The study assessed the role of environmental management agencies in flood risk management in rural and urban communities in Kogi State, Nigeria. The study showed variations in the extent of involvement of the environmental management agencies in flood risk management in the various flood-prone communities. For example, 83.8% of the respondents in rural communities reported that environmental management agencies were not involved in flood response activities in their communities, while 40% of the respondents in the urban communities reported that the agencies participated in

evacuation of flood victims. Similarly, majority of respondents (96.2%) in rural communities reported that their communities do not enjoy any flood recovery activities from environmental management agencies. Inaccessibility, shortage of human resources and inadequate funding were found to be responsible for the inefficiencies of the environmental management agencies. The study shows that inadequacy in preparedness, response and recovery were also responsible for the lapses observed. The study therefore recommends adequate funding for FEMA, SEMA and LEMC, provision of equipments and functional medium of communication between flood vulnerable communities and environmental management agencies to enhance the involvement of communities in flood risk management.

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