



# Examining the impact of communication during disasters: A case of perennial flooding along the Niger

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## ABSTRACT

**Background:** Communication remains a valuable tool needed for the survival of humans and societies. Even in the midst of natural and man-made disasters, communication has proven to be an indispensable component. Therefore, this study examines the impact of communication during disasters in Nigeria. Specifically, the study is on the use of communication during flood events along the River Niger which flows through some states in the country. **Methods:** This study is based on the theoretical framework of the disaster communication management model. This study focused on three states of Anambra, Edo and Kogi for the study. Using Cochran's statistical formula for sample size determination, the study sampled 664 from the population of the three states and used questionnaires as the data collection instrument. Commencing in 2022, the study spanned over a period of three years as online surveys and physical administration of questionnaires were explored to collect data within the stipulated time. **Findings:** The study findings revealed that several communication media and channels were explored for exchange during flood disasters and these were group, interpersonal and customary channels such as town spokespersons as well as traditional media of radio and TV. Furthermore, the study found that while interpersonal, group and indigenous media channels were effective, the same could not be said of traditional media and new media platforms. **Conclusion:** Disaster communication is an effective way towards disaster management, and among others, recommends that stakeholders should prioritize risk communication to minimize losses caused by disasters especially floods in Nigeria. The study revealed that confusion, infrastructure damage and lack of knowledge on community-based approaches are some of the challenges faced in communication during disasters. **Novelty/Originality of this article:** This study highlights the effectiveness of interpersonal, group and indigenous media communication in flood disaster response, which proved to be more effective than traditional and digital media.

**KEYWORDS:** communication; crisis; disaster management; flooding; information.

## 1. Introduction

Communication during disasters is considered as one of the numerous efforts invested in the quest at reducing risks that humans often encounter. When individuals or the population is faced with imminent danger, quick fixes become imperative including the use of communication to allay fears and reduce apprehension. Without communication, efforts aimed at providing relief could be hampered in a significant way just as lack of proper communication could result in confusion among the people affected by any class of disaster; flood, wildfires, earthquakes. Inefficient resource allocation and eventual loss of life stemming from the absence of coordinated response and actions are some aspects of the climax of lack of proper communication amid a disaster and such cases have been recorded across the world especially in the African continent.

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In Africa, disasters of different dimensions are common. This implies that the continent is often plagued by all types of disasters; natural and manmade. Akhigbe (2024) corroborated the foregoing with the assertion that though Africa is blessed with immense potential, the continent remains vulnerable to a range of disasters from man-made crises and even natural causes like droughts and floods and more. Aside the perennial cases of flooding reported across the continent, there are also reports of disasters of greater magnitude such as earthquake in Morocco, Wildfire in Algeria, cyclone in Mozambique and more (Chebet, 2023). These disasters leave destruction in their wake and in respect of climate-induced natural disasters, the continent is considered as the most vulnerable (International Finance Corporation, 2022).

Nigeria is one of the countries in sub-Saharan Africa faced with series of natural disasters. The country has also seen heavy consequences of climate change through series of natural disasters especially flooding. According to Stromsta (2024), the country faced its decade-long worst scenario when over 2 million Nigerians were displaced as a result of impacts of the 2022 climate change-related floods. The researcher noted that the incidence was traced to excessive rainfall leading to the release of the excess water from the Cameroun-controlled Lagdo dam. Aftermath of the floods saw 34 out of Nigeria's 36 reportedly affected causing major humanitarian concern due to forced movement of humans to mitigate the negative impact.

Reducing harm and minimising the negative impact of disaster is the main idea behind constant communication during disasters. According to Nakamura et al. (2017), reducing the number of victims is an important action within the disaster period and so this can be actualised through education of the populace about disaster prevention, promotion of early evacuation, and an enabling system that promote self-assisted evacuation. This is an indication that communication is crucial as all the suggested actions are communication-based – where there is exchange of messages between and among stakeholders; members of the affected communities governmental and non-governmental organisations alike toward favourable outcomes. This becomes even inevitable in situations where people in communities directly involved may heavily rely on the outside world for survival as seen in cases of flood in Nigeria.

Along the River Niger of Nigeria, farmlands, communities and livestock are always threatened by the aftereffect of perennial flooding from time immemorial. This is worsened by the issues relating to climate change and its effect on the environment. According to reports, the Niger River often sees exceptional proportions of overflow due to torrential rainfalls (African News, 2024). This is often adduced as the cause of damages that usually run into millions of Nigeria with unimaginable proportions of displacements (Babatolu et al., 2014). There is seemingly no immediate solution by the locals usually affected and they are also reluctant to abandon their ancestral homes and land. Therefore, the flooding and its attendant consequences has become a yearly occurrence for some. This has further raised the concern on immediate solution to the dangers faced by the population.

Communication that is quick and accurate is considered as essential whenever disaster strikes and a disaster communication plan is required for effective implementation during the period (Tulane University, 2023). On account of the need to make the necessary information available to all persons affected, this is the case anywhere in the world. Accordingly, the plan is prepared to ensure that communication in the midst of a disaster is structured toward adequate information-dissemination and distribution. Its importance cannot be overemphasised because it is a fundamental tool for disaster as well as risk management efforts (Marcillo-Delgado et al., 2022). Furthermore, the researchers alluded that good communication during disaster can be classified into planning related to early communication, information and communication system management, communication and communicator quality management and risk and disaster management awareness raising as well as stakeholder consolidation. These categories of planning are crucial to the process.

The implication of the above is that planning is crucial in disaster management communication. As demonstrated, one major environmental challenge in Nigeria is flooding. It is a result of dry land being submerged by bodies of water (Daniel & Udo 2019). Flooding

in Nigeria has culminated in great losses for the country leading to the death of persons and animals, disrupted daily routine of humans, affected agricultural produce, and then shelter and basic amenities in affected communities (Ujene & Oguike, 2020). While there have been efforts at combating flooding, it becomes overwhelming due to lack of effective communication at the nick of time (Centre for Journalism Innovation and Development, 2023). This has further exacerbated the issues surrounding disaster management especially within the context of flooding in some parts of riverine Nigeria.

It is imperative to restate the importance of planning and preparedness of critical stakeholders including the need for communication in the midst of a disaster such as flooding. Nigeria's states such as Kogi, Niger, Anambra, Delta, and FCT barley have any connection with flooding monitoring and metering organisations to keep themselves abreast months or week before flooding kicks in. In fact, the traditional means of communication is slowly being neglected with most government institutions and non-governmental organisations gravitating towards the use of information and communication technologies including new media such as social media. This is, however not considered as an effective channel of communication especially when dealing with rural Nigeria and passing important information such as early warning about perennial flooding.

The issues related to channels and messaging are somewhat entwined and so there is a vacuum that must be filled to reach out and broaden communication channels so that the goal to mitigate the impact of floods in Nigeria can seamlessly actualised. Framing flood early warning communication does not yield positive result and the efforts of environmental institutions prove abortive (Centre for Journalism Innovation and Development, 2023). This is seen as one of the contributory factors to the case of little or no awareness about the environment climate change issues (Meribe, 2017). Overall, the effect of such public crisis communication can be significantly and negative affected by the lack of proper planning, which often leads to the use of inappropriate channels and poor message design. It is against this backdrop that this study sought to examine the impact of communication during disasters in Nigeria focusing on the case of perennial flooding along the Niger River.

### *1.1 Statement of the problem*

The importance of communication within and after disasters remains valid and popular among researchers. This is an indication that risk communication is critical in disaster management. The population must be made to have access to risk information detailing their increased vulnerability and variety of hazards in disaster situation (Wisner et al., 2003). In essence, the growing need is usually precipitated by the impending danger or signs of it (as the case may be). Therefore, efficient communication (which is the act of exchanging information in a preferred way) is encouraged (Fathollahzadeh et al., 2024). Part of the goals of efficient communication is to ensure that the substance of the message is not altered in the communication process and the overall goal is to guide members of the society to make the right choices based on truthful information available to them.

Numerous studies have established the importance of communication during disasters (Bradley et al., 2014; Dehghani et al., 2022; Djoumessi & Mbongo, 2022; Khumairoh et al., 2021; Nakamura et al., 2017; Owolabi & Ekechi, 2014). Success in disaster relief operations is premised on dependable communication from the concerned authority (Daly, 2020). Nevertheless, there are still issues with communication in respect of natural and man-made disasters in this part of the world. These issues range from the message development, content of the communication and the appropriate channel to reach the target audience (and this is from the strategy angle). In some other cases, it is absence of communication or inadequate communication throughout the crisis period. Accordingly, a lack of communication is considered to increase incidence of uncooperative public in respect of instruction (Fathollahzadeh et al., 2024). Consequently, efforts at risk mitigation could be rendered futile or ineffective.

Furthermore, absence of proper communication in the wake of a natural disaster could amount to a complex situation of vulnerability. Imagine a situation where people do not have information about a rescue mission under way; the levels of danger could be magnified on account of serious apprehension. Accordingly, there is an increase in vulnerability on the part of individuals affected by the disaster (Hansson et al., 2020). This makes prioritising communication amid disaster a great issue of concern to stakeholders; including identifying the appropriate channel of communication and the right message design toward activating an effective communication strategy. With this knowledge, disaster management is still a challenge in modern time. This study, therefore, examined disaster communication in Nigeria with specific focus on the perennial flooding along River Niger. This study became imperative to bridge knowledge gap in respect of communication amid disasters in parts of Nigeria especially from the angle of the approach seen during the 2020 floods in the country. The study answered the following research questions: what are the information and communication channels used during flooding along the Niger, what is the level of effectiveness of such channels adopted for communication and information-dissemination, and what are the challenges associated with communication amid disasters in Nigeria.

### *1.2 Communication in disaster management*

The concept of communication within the context of disaster management is also referred to as "disaster management communication" in this study. When considered from a componential perspective which implies looking at the words in component; it is, therefore, reviewed as "communication" and "disaster management." Communication refers to a system by which two or more persons exchange feelings, ideas, messages and information in form of codes, signs, symbols and language that has been previously agreed upon by parties in the communication encounter (Inobemhe et al., 2023). The implication of this definition is that communication takes place when individuals otherwise known as communicating parties understands the substance therein in respect of the means in which the message is conveyed.

Disaster management, on the other hand, is considered as the way humans deal with the economic, human, environmental and material impacts of disaster and the process of preparation, response and lessons drawn from the effects of significant points of failure (Elliott, 2014). This encompasses all forms of disaster; natural, man-made, complex and pandemic emergencies among others. Different aspects or phases of disaster management include mitigation, preparedness, response, and recovery (Francoeur, 2023; Rajan et al., 2021; Shirazi et al., 2023). Disaster management has become increasingly necessary owing to the losses from different disasters; fires, floods, storms seeing a sevenfold increase from the 1970s to 2010s.

### *1.3 Literature review*

In respect of the application of communication in disaster management, literature abounds as different researchers and scholars have postulated on the concepts and contexts relating thereto. Some of the perspectives are considered under this section. The review takes on an approach that considers the objectives of this study looking at literatures that tilt toward the impact of communication in disaster management, channels of communication in disaster management, their effectiveness as well as challenges encountered in the use of communication for disaster management. Communication is important and also impactful in disaster and risk management. Marcillo-Delgado et al. (2022) corroborated the foregoing with the assertion that in risk and disaster management (RDM), planned communication is seen as a fundamental tool and this is based on the powers of communication to modify the perceptions of risk held by members of the public. This is also the case in Nigeria as researchers have acknowledged the importance of disaster warning information-exchange among management teams (Owolabi & Ekechi, 2014). The

emphasis is on the systemically planned disaster warning communication to alert vulnerable population. This is important to mitigate severe impacts of such natural occurrences.

In respect of disaster management, comprehensive communication strategies and channels in form of mass media and interpersonal communication remain impactful especially at the community levels (Sharma et al., 2021). In the study conducted by the researcher, it was revealed that communication channels explored amid disasters often varied with the target groups as the main focus as factors such as level of accessibility and education as well as their role in reconstruction are also often considered. Furthermore, Yuliana (2023) also identified media as an important channel of communication during disasters having the capacity to provide useful information and solution for managing risks through engagements with members of the public. In essence, the media constitute essentials channels for communication in the midst of disaster.

In a study conducted by Diallo et al. (2017), findings showed that disaster communication is effective as it provides and maintains real-time situational awareness, aids in stress management, provides the required support and disseminates information to a large audience, and also bolsters recovery efforts. The implication is that communication within the period that a disaster is recorded provides the platforms for stakeholders to meet the information needs of the population. Accordingly, the idea of targeted communication during such period becomes useful. It is an effective strategy applied to meet the different information needs of the population in order to achieve an inclusive and efficient disaster risk management (Anderson et al., 2023). With targeting communication strategy, citizens' trust can be built while engagement is also encouraged. The researchers further noted that the strategy can also be used to attain efficient use of resources, and identify the different needs of diverse groups.

Challenges are associated with the use of communication (especially modern communication technologies) to manage disasters. Accordingly, findings from a study demonstrated that some of the challenges could manifest in form of credibility problems, legal as well as structural and organisation challenges, socio-economic conditions of the members of the publics, convenience and inconveniences associated with the use of platforms for emergency purpose, and security and privacy concerns (Diallo et al., 2017). Additionally, Fathollahzadeh et al. (2024) identified distrust, ineffective information dissemination, insufficient educational communication and uncertain warning messages as some of the challenges with risk and disaster communication. The implication is that these challenges could have advance effect on message communication which can greatly hamper rescue operations or rebuilding.

Empirical studies on disaster communication also abound. A study conducted by Vinance et al. (2021) demonstrated the use of communication to improve preparedness within a disaster cycle and also showed that disaster management can be built on four foundations such as situational awareness, leaders commitment, media partnership and audience focus. The researchers also revealed the existence of a disaster management programme in Surabaya city. The study under review and the current one are similar with focus on communication during disaster but uniquely different on the grounds of the methods and scope. Whereas the study under review is based on qualitative methods and was conducted in Indonesia, the current one is based on quantitative research methods and conducted to examine disaster/risk communication in respect of flood incidences in Nigeria.

Onwe et al. (2019) conducted a study on the use of strategic communication the management of flood disasters in Nigeria and revealed that the ministry of government in charge usually communicate such issues through the strategic means of utilising the Internet, news, adverts, and print media especially with information on precautionary measures against such flood disasters. The researchers also revealed that the ministry's pre-disaster measures, however, were reportedly low. A related study by Ben-Enukora et al. (2023) also showed that interpersonal communication channels became more accessible ones in respect of early warning disaster communication efforts. The researchers revealed that though there was high perception of coping abilities among the people that took the

survey, there was an issue with the ability to take precautionary measures. This is in line with the study conducted by Onwe et al. (2019) on low pre-disaster precautionary measures-related communication in Nigeria.

Audience evaluation of the coverage of the traditional medium of radio during the 2022 flood disasters in Nigeria was the focus of another study conducted by Amanawa & Amanawa (2023) where the researchers relied on survey methods to assess the situations. Findings showed that members of the public were exposed to information on radio on the floods. Furthermore, the researchers revealed that flood disaster was, however, not given adequate prominence on radio through timely reportage, educating the masses and calling support for the flood victims. The implication of these results is that though radio reported flood disaster-related news, the prominence was not adequate as seen in the case of the perceptions of residents of Port-Harcourt metropolis in the South of Nigeria. This also resonates with studies that showed low or complete lack of coverage of environmental-related reporting within the Nigerian mediasphere (Obasi & Msughter, 2023; Uzochukwu et al., 2014). A related study also contrastingly showed high level of coverage and reportage among media organisations in the county (Omu-Ngebo & Alegu, 2024). These studies are relevant to provide a basis for understanding the complexities of disaster communication through different channels.

The study by Oke et al. (2018) showed that various mass media channels such as radio and television are used for disaster communication but that community-based approaches are not usually considered. The researchers noted that the community-centred approaches such as community-focused seminars and town hall meetings as well as interpersonal encounters are not given due attention by concerned authorities in their intervention through communication. Relatedly, findings from another study revealed that the Federal Ministry of Environment in Nigeria has a primary focus on sensitising the population through mainstream media but often fails to take proactive measures to risk communication concluding that such efforts were low (Onwe et al., 2019). This is an indication that much was not being done by the ministry on the basis of their approach. Additionally, their approach may be more of reactive than proactive. These studies and the current one are similar based on their focus on disaster management. However, this current study is particularly focused on perennial flooding along the River Niger.

#### 1.4 Theoretic framework

The theoretical framework for this study is built on Haddow & Haddow's disaster communication management model. The model was developed by George Haddow and Kim Haddow with a comprehensive framework used to manage communication during disasters. Accordingly, the model is based on the assumption that effective communication is important in disaster response and recovery actions. It is also based on three categories namely pre-disaster phase, response phase, and recovery phase. The pre-disaster phase refers to that period where communication networks are established, the message created and training exercises conducted for stakeholders. The response phase is where the networks get activated, critical information disseminated and response efforts coordinated. Finally, the recovery phase involves providing updates on progress made in respect of recovery, facilitation of community engagement and providing support for long-term efforts aimed at recovery.

Haddow & Haddow (2014) described disaster communication as flow of information within a disaster including the period before the events, during the events and after the events. In essence, the researchers also explained that an effective disaster communication can be built on increased credibility, trust, reliability and transparency with various stakeholders that include the media and government. Furthermore, the key components of the model include communication networks, message development, information dissemination, public information, crisis communication and community engagement. The main focus is to ensure that stakeholders are fully engaged including members of the targeted community for effectiveness. This model provides the framework for this study

because of its explanatory strength and the postulation that communication professionals and emergency management officials can by virtue of understanding of its components and phases develop effective communication amid disaster response and recovery efforts. In contrast with the vulnerability theory crisis communication theory, Haddow & Haddow (2014) disaster communication model provides a comprehensive idea about activities involved in disaster management as a whole with focus on all stakeholders. The model's emphasis on the phases of disaster provides greater insights to appreciation of communication in all the stages.

## 2. Methods

The survey research design was explored for this study. Accordingly, the survey was conducted with the aid of questionnaire as instrument of data collection administered to community members in select states of Nigeria. Since the study is focused on the flooding along the Niger River, three states of the number of states the river flows through were purposively selected. Consequently, Anambra, Edo, and Kogi states made the final selection of states of focus in this study. These states were selected based on representativeness. Whereas Anambra is an Eastern-Nigerian state, Edo is in the South while Kogi is in the North but borders the Western part of the country. Population estimates of the states based on information from the National Bureau of Statistics is 10.7 million. A sample of 664 was statistically determined with the use of Cochran formula for samples which is given as:

$$\frac{Nz^2(p)(1-p)}{Ne^2 + Z^2(p)(1-p)} \quad (\text{Eq.1})$$

The questionnaire is the instrument of data collection. It was designed with the 5-item Likert Scale providing the guide (D-Disagree, SD-Strongly Disagree, A-Agree, SA-Strongly Agree, U-Undecided). The validation of the instrument was face validity by experts in communication that are senior and experienced colleagues. Additionally, the reliability measurement was conducted through a pilot survey in the early period – aftermath of the 2020 floods. Copies of the questionnaire were administered to 10 persons each from the states in focus namely Anambra, Edo and Kogi – this implies that 30 copies were A Cronbach's Alpha test showed a .80 report which makes the instrument reliable for the main study. Researchers also avoided leading questions to foreclose cases of bias resulting from the data gathering instrument.

The study was initiated in 2020 following the deadly floods seen in the different parts of Nigeria and continued through 2023 with the final results obtained in 2024 through the face-to-face administered questionnaire. The researchers enlisted the services of 3 research assistants; one from each of the affected states to assist with the data collection. Upon completion of the data gathering procedures, the statistical package for social sciences (SPSS) version 21 was used to analyse the data. The data analysis process involved descriptive statistics such as frequencies and percentages while also considering the mean and standard deviations results from the data obtained.



Fig.1. Map of Nigeria showing select states and the River Nigeria flow (Nigerian Archives)

### 3. Results and Discussion

The study achieved a 90 percent response rate with cultural and socio-economic factors being reasons for non-response bias by rural dwellers in some communities along the river banks. However, data analysis is based on responses from 598 respondents who took the survey over the four-year period.

Table 1. Information and communication channels used amid floods

Parameters	D [%]	SD [%]	A [%]	SA [%]	U [%]	Mean [ $\bar{x}$ ]	Decision
There is pre-flooding information and communication by various stakeholders	245 [41.0]	267 [44.6]	35 [5.9]	21 [3.5]	30 [5.0]	2.62	Rejected
There is constant communication and information-dissemination amid flooding	283 [47.3]	230 [38.5]	46 [7.7]	16 [2.7]	23 [3.8]	2.58	Rejected
Interpersonal and group communication channels are mostly explored	2 [3]	21 [3.5]	135 [22.6]	426 [71.2]	14 [2.3]	4.60	Accepted
Radio and TV are the channels usually explored	20 [3.3]	56 [9.4]	355 [59.4]	147 [24.6]	19 [3.2]	4.06	Accepted
Social media platforms and new media technologies are the channels utilised	113 [18.9]	190 [31.8]	40 [6.7]	27 [4.5]	228 [38.1]	2.21	Rejected
Town criers, community square and religious centres are the avenues for communication and information dissemination	30 [5.0]	14 [2.3]	324 [54.2]	212 [35.5]	18 [3.0]	4.14	Accepted

(Field Survey, 2022-2024)

KEY: D=Disagree; SD=Strongly Disagree; A=Agree; SA=Strongly Agree; U=Undecided

Decision Rule: 0.00 – 2.99 = [Rejected] 3.00 – 5.00 = [Accepted]



The data as seen in table 1 above demonstrated that some communication channels are explored during flood disasters in Nigeria. However, results showed that there is no pre-disaster information and communication by various stakeholders ( $\bar{x} = 2.62$ ), no constant communication and information-dissemination amid flooding ( $\bar{x} = 2.58$ ), and that no social media platforms and new media technologies are utilised as channel ( $\bar{x} = 2.21$ ). In contrast, data in the table also showed that interpersonal and group communication channels ( $\bar{x} = 4.60$ ), radio and television ( $\bar{x} = 4.06$ ) and town criers, community square and religious centres ( $\bar{x} = 4.14$ ) are mostly explored as avenues/channels for communication and information-dissemination during disasters. The implication of data in the table therefore is that though appropriate stakeholders usually disseminate information during disasters, little or nothing is done about pre-crisis communication which can also be referred to as risk communication. This has created a case of lack of proper disaster management leading to loss of lives and property across the country. Varied figures are usually released as casualty figures during flood disasters in Nigeria's different flood periods.

Table 2. Level of channel effectiveness

Parameters	D [%]	SD [%]	A [%]	SA [%]	U [%]	Mean [ $\bar{x}$ ]	Decision
Information and communication through interpersonal and group is always well received than any other	25 [4.2]	41 [6.9]	212 [35.5]	228 [38.1]	92 [15.4]	3.77	Accepted
Radio and TV are the preferred channels due to their impact and informative functions	29 [4.8]	45 [7.5]	74 [12.4]	20 [3.3]	430 [71.9]	1.70	Rejected
Social media platforms are more personalised and so are effective	66 [11.0]	63 [10.5]	60 [10.0]	45 [7.5]	364 [60.9]	1.92	Rejected
New media such as mobile phones are effective amid flooding	70 [3.3]	66 [9.4]	69 [59.4]	45 [24.6]	348 [58.2]	1.98	Rejected
Town criers, community square and religious centres are effective channels for communication during floods situations	-	-	-	598 [100]	-	5.00	Accepted
Communication and information-dissemination amid flooding has been effective way to calm our people	37 [6.2]	20 [3.3]	201 [33.6]	178 [29.8]	162 [27.1]	3.33	Accepted

(Field Survey, 2022-2024)

KEY: D=Disagree; SD=Strongly Disagree; A=Agree; SA=Strongly Agree; U=Undecided

Decision Rule: 0.00 – 2.99 = [Rejected] 3.00 – 5.00 = [Accepted]

Seen in table 2 above is data that border on the level of effectiveness of the channels of communication and information-dissemination utilised during flooding and it provides answers to research question two of this study. Interpersonal and group communication ( $\bar{x} = 3.77$ ), town criers, community squares and religious centers ( $\bar{x} = 5.00$ ) were found to be effective channels or avenues for communication during flood situations in select states in Nigeria. Seen in the data the aspect that revealed that radio and TV ( $\bar{x} = 1.70$ ), social media platforms ( $\bar{x} = 1.92$ ), and new media such as mobile phones ( $\bar{x} = 1.98$ ) were found to be ineffective based on results from the field survey in mostly rural communities of select states.

The result in the table is an emphasis on interpersonal and group communication as well as indigenous communication techniques demonstrate the geographical make-up of places that suffered most during the floods. Communities that lie along the river banks have a communal kind of orientation. This also explains the rejection of social media as an effective channel against global trends. Respondents to the survey are largely rural dwellers who coincidentally reside in communities along the banks of the River Niger.

Table 3. Challenges with communication amid disasters

Parameters	D [%]	SD [%]	A [%]	SA [%]	U [%]	Mean [ $\bar{x}$ ]	Decision
There are challenges associated with communication amid disasters in Nigeria	12 [2.0]	18 [3.0]	165 [27.6]	238 [39.8]	165 [27.6]	3.50	Accepted
There is a challenge with distrust of the government and other stakeholders	27 [4.5]	75 [12.5]	169 [28.3]	90 [15.1]	237 [39.6]	2.75	Rejected
Confusion also often arises due to lack of proper risk communication before floods	20 [3.3]	37 [6.2]	209 [34.9]	302 [50.5]	30 [5.0]	4.23	Accepted
There is challenge with infrastructure breakdown where electricity and telecommunication facilities are affected	18 [3.0]	21 [3.5]	170 [28.4]	341 [57.0]	48 [8.0]	4.23	Accepted
Lack of knowledge of community-based approach to communication is a challenge	28 [4.7]	39 [6.5]	184 [30.8]	294 [49.2]	53 [8.9]	4.07	Accepted
Lack of follow-up is a major challenge in respect of communication during disasters	22 [3.7]	11 [1.8]	271 [45.3]	276 [46.2]	18 [3.0]	4.28	Accepted

(Field Survey, 2022-2024)

KEY: D=Disagree; SD=Strongly Disagree; A=Agree; SA=Strongly Agree; U=Undecided

Decision Rule: 0.00 – 2.99 = [Rejected] 3.00 – 5.00 = [Accepted]

Table 3 above showed data in respect of challenges encountered with communication and disasters in Nigeria. Accordingly, a mean score of 3.50 is demonstrative of the affirmation by respondents that there are challenges associated with communication amid disasters in the country. Additionally, confusion due to lack of proper risk communication before floods ( $\bar{x}$  = 4.23), infrastructure breakdown where electricity and telecommunication facilities are shutdown or rendered ineffective ( $\bar{x}$  = 4.23), lack of knowledge of community-based approach to communication ( $\bar{x}$  = 4.07) and lack of follow-up were identified as challenges with communication and disasters in Nigeria. These results buttress the wrongs in the communication architecture of the ministries, agencies and departments (MDAs) of government saddled with the responsibility of managing disasters in the country. A situation of effective pre-disaster communication prepares the population for imminent danger and may also be useful in efforts to mitigate impacts of flood disasters in Nigeria.

### 3.1 Discussion

This study was conducted to examine the impact of communication during disasters in Nigeria, particularly the flooding along the River Niger. Data from the field survey revealed that communication takes place within the disaster period. Accordingly, responses to research question one demonstrated that there is communication, however that warning and pre-crisis communication or risk communication efforts are not prioritised by the concerned authorities. In respect of the channels, the study showed that interpersonal and group communication channels, radio and TV channels, as well as town criers, community squares and religious centres as some channels explored for the purpose of communication and information-dissemination during flood disasters in parts of Nigeria. This resonates with earlier studies that showed the use of specific channels for communication during flooding cases in Nigeria (Onwe et al., 2019; Sharma et al., 2021; Vinance et al., 2021). This study's findings on the use of community-based approach in form of indigenous communication contrast with that of Oke et al. (2018) that showed that such avenues were not given attention. This implies that there was absence of grassroots-based campaigns pre-flood in line with findings of a study that showed lack of awareness campaigns in similar situation in Nigeria (Lamond et al., 2019).

Findings of this study demonstrated the effectiveness of avenues like interpersonal and group communication, town criers, community squares, and religious/worship centres in flood disasters-related communication and information dissemination. Relatedly, it was also revealed that information and communication amid disasters has remained an effective way to admonish the people to remain calm. In essence, such communication efforts meet the information needs of the people by providing useful messages on ways to navigate through the period. These results align with those of Fakhriati et al. (2023) where it was revealed that a triangular disaster communication could empower the locals with the capacity to remain calm while assisting one another as they collectively navigate through the disaster phases. Furthermore, the researchers showed that through effective communication, locals are empowered with the capacity to interpret disasters as positive signs of life. From several dimensions, this may present the people with the opportunity to plan and care less about material loss but mitigate and reduce harm by preventing loss of lives during disasters.

It was also revealed in this study that there are some challenges associated with communication amid disasters in Nigeria. Data showed that confusion often arise due to lack of proper risk communication before floods. The danger of this is that miscommunication will arise as Esoh & Abutu (2018) also showed issues with casualty figures as major challenge disaster management in Nigeria. Additionally, the researchers also found that whenever electricity and telecommunication services are affected by virtue of flood disasters, the infrastructure challenge is also made manifest. Lack of knowledge of community-based approach to communication was also identified as a challenge associated with disasters in Nigeria. Finally, lack of follow-up in the disaster communication efforts was also pointed as one of the major challenges that affect disaster communication. The result on lack of proper risk communication negates the pre-disaster phase of communication as proposed by the Haddow & Haddow's communication disaster management model. The result on lack of follow-up aligns with findings of Onwe et al. (2019) where it was showed that proactive measures of the government ministry were low. In essence, while Onwe et al. (2019) showed deficiency in pre-disaster communication, this study showed issues with post-disaster communication in the country.

The findings presented above also mirrors that of a study where findings showed that flood-related sensitisation programmes are not in place and the few ones noticed are rarely aired (Onwe et al., 2019). The findings are in sharp contrast of a study conducted elsewhere where results showed that appropriate authorities often organised sensitisation and simulations exercises to reduce the risk associated with such disasters like earthquake (Vinance et al., 2021). This is even considered as an expansive measure toward disaster mitigation which Kumar et al. (2021) described as ways to manage both natural and unnatural disasters which eventually lead to a reduction of vulnerability and damages and losses minimisation. This implies that once these measures are activated, everyone becomes aware of the need to cooperate to minimise harm resulting from the disasters.

#### 4. Conclusion

From the findings above, the researchers conclude that though communication is important in disaster management, the lack of it is contrastingly a serious challenge especially in disaster-prone areas. Different parts of Nigeria suffer severe environment impact such as erosion from the perennial flooding challenges and may require communication and information that border on warning from the appropriate quarters. It is established here that disaster communication is effective in disaster management in Nigeria through findings that such has helped calm people during flooding in the country. Consequently, deliberate efforts are required to engage inhabitants of communities along the River Niger banks in meaningful communication prior to the raining seasons. This will ensure a systematic and procedural way or ensuring that impacts are mitigated.

It is also part of the conclusion of this study that though there is some level of disaster-related communication in Nigeria, there is seemingly a challenge with pre-crisis information

exchange. There is also the challenge with follow-up by the concerned authorities during flood disasters. These challenges also present unique opportunities as learning points toward enhanced communication and information management before, during and after disasters in the country.

Government and other critical stakeholders must see the need for pre-crisis or risk communication and ensure priority attention is given to such to protect the population in danger of some natural disasters such as flooding, fires and even manmade ones. The step remains valid to minimise harm. However, it can be achieved by building a synergy and exploring a common front through constant engagement and investment in disaster information and communication efforts across Nigeria especially in such areas that are faced with imminent risk of natural disasters. The government can leverage on religious organisations and rural healthcare delivery channels to organise engagements in form of seminars, training and conferences.

Media organisations also have a role to play as part of stakeholders' efforts at mitigating the negative impact of disasters in Nigeria especially the avoidable ones. This can be premised on the social responsibility theory and alternative channels explored to reach rural population during disasters. This will include media-induced exploration of interpersonal communication as part of efforts to provide the needed information to navigate the crisis situations. This can be achieved through media outreach in vulnerable communities along the banks of River Niger in Nigeria.

Community-based approach to information dissemination avenues such as town criers, markets, village squares and religious centres must be continually explored to ensure that most members of the population (especially those in rural communities) are exposed to communication that borders on warning and risks as well as safety measures necessary to minimise harm. This can be achieved through partnerships between government and non-governmental stakeholders. Creating a safe policy space and broader appreciation of indigenous communication techniques remain some of the viable options to strengthen their use in disaster and risk management in the country. Stakeholders must also work together to synergise.

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## Author Contribution

All authors contributed equally to the conceptualization, methodology, analysis, and writing of this review. They collaboratively reviewed and approved the final manuscript for submission.

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The authors declare no conflict of interest.

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