

Flood Prediction: Evaluating the Effectiveness of Communication Strategies of the Nigerian Meteorological Agency

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Abstract

In recent times, the stark realities of climate change have precipitated an unprecedented wave of natural disasters across the globe, with Bayelsa State of Nigeria having more than its fair share of this natural phenomenon. The scale of the 2022 flood which seemingly caught Bayelsa State unprepared, raises salient questions as to whether or not the agency saddled with the responsibility of observing Nigerian weather, climate and providing meteorological, hydrological and oceanographic services- NIMET is effectively playing its statutory role of risk communication to Nigerians living in flood prone areas. Using state-of-the-art technology, NIMET has the core mandate of observing, analysing and ensuring timely and accurate reporting of weather and climate for socio-economic development and safety of lives and property. However, this study also x-rays the extent to which the Bayelsa State Government proactively utilises generated data and information (if any); whether or not relevant government authorities regard or disregard forecasts, warnings and predictions provided. This study also critically examines the communication strategies deployed by NIMET. Anchored on the Agenda-setting theory, this study adopts a qualitative method in surveying and exploring the experiences of loud victims through in-depth interviews, with a view to bridging the communication gap between the disaster management agency and the Bayelsa people.

Keywords: Flood, NIMET, Meteorological, Disaster Communication Strategy, Risk Communication. Management,

Introduction

The 2022 flood precipitate a huge humanitarian crisis in Bayelsa State, with devastating impact on farmlands, critical infrastructure and other facilities worth billions of Naira. Preliminary reports and data available to the Nigerian Meteorological Agency, State Emergency Management Agency and other agencies indicate that Bayelsa was one of the most flood impacted States in the country. On a national scale, Nigeria's seemingly annual tragedy of rampaging flooding was at its worst in 2022. It is estimated that over 400 persons were killed by the floods as 27 out of the 36 States were affected. Even the Federal Capital Territory, Abuja was confronted with the threat of the flood extending from neighbouring Lokoja, the Kogi State Capital where like as in the case of Bayelsa, countless number of families were displaced, thousands of hectares of farmlands destroyed and

communication infrastructure such telecommunication, radio and television masts were shut down thus disrupting the free flow of communication in some areas.

Prior to the advent of the 2022 flood, the Nigerian Meteorological Agency NIMET reportedly predicted a high amount of rainfall expected to trigger flooding in high risk, flood-prone States in the months of September and October, 2022 based on the distribution recorded in the country in July and August, 2022. According to a Punch newspaper publication in July, 2022, the Public Relations Officer of NIMET, Muntari Ibrahim in a press statement had warned the Federal, State and Local Governments that faced a high risk of flooding included Gombe, and Jigawa in the northwest, Borno, Bauchi and Taraba in the north-east, Plateau in the north-central and Bayelsa in the south-south. Other States identified to have probably experienced flash floods included Kano, Adamawa, Rivers, Akwa Ibom, Cross River, Abia, Imo, Enugu, Lagos, Ogun, Osun, Ondo, Oyo and Ekiti.

Muntari Ibrahim posited that: The saturated state of the soil moisture across the country in July and heavy rainfall recorded in August predisposed identified areas at risk of experiencing varying degrees of flooding, ranging from high, medium, low and flash floods in September. Sokoto, Kaduna, Jigawa, Bauchi, Kano, Borno, Gombe and Nassarawa States recorded over 300mm, which represents over 40 percent of long term, normal rainfall for these places in one month. Places around the south western part of the country however recorded less than 200mm as a result of the long dry spell associated with 'August break' in those areas. He further stated that places with major river channels may experience high risk of flood outbreak due to accumulation of water already on the water channels which may not be able to contain any additional water. (Muntari, 2022).

In view of NIMET's prediction and forecast, this study also analysed the extent to which relevant organs of government deployed communication strategies to execute public awareness campaigns towards intensifying adaptive, mitigated and response mechanisms to manage the humanitarian crisis engendered by the 2022 flood. Evidently, when the target mass audience receives risk or crisis messages, they make risk assessments based on sensory perception, particularly in the case of natural disasters (Helson & Ruitenberg, 2004). The risks associated with flooding and other natural disasters are typically very visible and readily well understood if the appropriate information is transmitted in a timely manner to propel action from the populace to protect themselves from looming danger.

Objectives of the Study

This study aimed at assessing the effectiveness of the communication strategies employed by the Nigerian Meteorological Agency (NIMET; in proactively creating public awareness about the 2022 flood forecast which ravaged a significant portion of Bayelsa State, Nigeria and specifically:

1. Assess media strategies used by NIMET to communicate predicted flood outbreak.
2. Ascertain the effectiveness of NIMET's communication strategy on Bayelsa residents.
3. Analyse risk communication techniques.
4. Identify the media sources utilized by Bayelsa residents.

Research Questions

1. What media strategies are used by NIMET in communicating possible flood outbreak?
2. How effective is NIMET's communication strategy?
3. To what extent are risk communication techniques used by NIMET?
4. What preferred media sources do Bayelsans utilize?

Theoretical Framework

This study is anchored on the agenda-setting theory. The submission made with regards to consumers of mass media content, that 'pictures in their heads' is of greater impact than their direct communication with the environment and that 'the news media construct our views of the world', (Wahl Jorgensen and Hanitzsch, 2009, p. 147), were actually the assertion of Walter Lippman (1922), who was credited with initiating thoughts on the agenda-setting role of the mass media. Lippman's notion was that the average man was incapable of making accurate judgments from the pieces of information that pervades them in their environment. Hence, it was necessary for the elite to protect them.

Central to the agenda-setting theory is the idea that the public builds on the conjectures obtained from media content, especially news, to inform its reflections on issues in the public domain. McQuail (2010) notes that agenda-setting as a term was originated by McCombs and Shaw (1972, 1993) after a series of studies on political campaigns in the United States as well as other countries. But the formation into a proper theoretical concept, according to Baran and Davis (2009), is attributed to Bernard Cohen.

Apparently, as characteristic of several other phenomena, the agenda-setting theory is still evolving. Since the original study, McCombs (2001) posits that there is another level to the agenda-setting theory called second level agenda-setting. The first level of agenda-setting focuses on the perceived importance or relative salience of issues or subjects (Wu and Coleman, 2009, p. 776). On close examination, the second level of agenda-setting instead focuses on the perceived importance of attributes or issues (Wu & Coleman, 2009, p.776). In my opinion, the focus of the second level of agenda-setting is not on what the media emphasizes, but on how they describe the issue under consideration.

Similarly, Coleman and Banning (2006) posit that in the second level of agenda-setting, the tone and the perception of an issue is just as important as the amount of coverage an issue receives. Second level agenda-setting theory presupposes that the media also frame attributes of these issues, thus affecting how the issue is defined.

The foregoing clearly situates the agenda-setting theory as germane to this study as it is instrumental to evaluating the amount and depth of media coverage, the perceived salience and tone of flood prediction messages encoded and transmitted by the Nigerian Meteorological Agency NIMET through mass media channels to residents of flood prone areas in Bayelsa State.

Risk Communication and Management

Risk communication encapsulates prescriptions on methodologies for giving expert advice to members of the public about how to deal with natural disasters and other issues of public interest, using the mass media to communicate associated risks. Clearly, the first step is in identifying that the public will view risks differently from how experts view risks, and recognizing that the public's broad, mild attribute view of risk cannot be ignored. The mental model of risk communication framework is a method to target risk communication efforts at the key knowledge deficiencies in the public (Morgan et al. 2002). With regards to communicating vital information relating to impending flood disasters, communication effort deployed by NiMET and other disaster

management agencies should not waste time nor dissipate energy telling people what they already know, but rather empirically determine what people know and do not know and direct risk communication efforts towards the latter. Risk management on the other hand, involves the process of determining how one ought to respond to risks, in this case, in the event of a natural disaster. In Nigeria and Bayelsa in particular, the public does not react to flood risks simply in terms of its expected annual fatalities. For instance, despite early forecasts and warnings by NIMET lots of people would rather remain inside their flooded apartments or construct stilts, rather than relocate to higher ground before the flooding situation gets to its climax, with grave implications for public safety. The government on its part would rather prefer a sluggish, reactionary approach to handling the crisis situation, rather than organizing preemptive evacuation operations in flood prone areas as obtainable in more developed climes. The damaged portions of the Yenagoa-Amassoma road which plays host to the State-owned Niger Delta University and the Bayelsa International Airport paints a grim picture of the catastrophic impact of the 2022 floods.

The Role of Nimet in Disaster Risk Management

The Nigerian Meteorological Agency (NIMET) came into existence by an Act of the National Assembly, the NIMET Establishment Act 2003 and became effective on 19th June 2003 following Presidential assent. The core mandate of NIMET is to function as an effective provider of weather and climate services for sustainable national development. The agency is also studied with the responsibility of providing meteorological, hydrological and oceanographic services in support of national needs and international obligations. NIMET is under the Ministry of Aviation and provides aviation weather services as well as issues weather reports to contribute to safety improvement and efficiency of air navigation. NIMET has three core professional departments, namely: Weather Forecasting Services (WFS), Applied Meteorological Services (AMS), and Research and Training (R and T).

Against the backdrop of extreme weather and climatic events such as the unprecedented 2022 flood in Nigeria, NIMET is constrained to developing more proactive techniques of providing goods and services necessary to supporting the achievements of the Sustainable Development Goals (SOGs) and by extension, strengthen the regional and global systems for the benefit of all.

News Sources in Bayelsa State

Bayelsa State is one of the States in the south-south region of Nigeria, located in the core of the Niger Delta Region. Created on October 1st, 1996, it was carved out of the old Rivers State, making it one of the newest States in the Federation, with the State capital in Yenagoa. Bayelsa has eight local government areas namely: Ekeremor, Koikuma/Opokuma, Yenagoa, Nembe, Ogbia, Sagbama, Brass and Southern Ijaw. Most parts of the State fall within the high risk of perennial flooding. With a total area of 10,773km², Bayelsa shares a boundary with Rivers to the east and Delta to the West, with the waters of the Atlantic Ocean dominating its Southern borders.

There are a number of electronic and print media, through which information is disseminated to members of the public. The traditional media include Niger Delta Television, AIT, NTA, Radio Bayelsa 97.1, Rhythm 94.7, Peoples' FM 93.1 and Royal FM 95.5. However, in this information driven era, the social media otherwise referred to as new media, has become one of the main news sources. These exist side-by-side in various print media.

In contemporary times, the new media has become a cardinal source of accessing information. Historically, social media sites came to the front burner due to the success recorded by sites such as Myspace and Flickr in the early 2000s. Also, sites such as Photobucket and Flickr have facilitated online photo sharing. YouTube emerged in the year 2005, ushering in a completely new way for people to communicate and share information with one another. By 2006, Facebook and Twitter became accessible to numerous users across the globe, including developing countries like Nigeria. Presently, several social media sites exist which present ample opportunity for the government to transmit news revolving around its policies and programmes, thereby complementing the traditional media such as television, radio, newspapers and magazines. Advantages of the new media in news dissemination appears to be multifaceted as it is timely, cost effective, comfortable and easily accessible, thereby making it easier for the audience members to discuss topical issues inherent in news.

Audience Perception of News Stories

Evaluating audience reactions to news stories, Morgan (1988) asserted that the audience reaction to news stories is very pertinent, especially when the news is of public interest. Audience members react to news stories based on the disposition to the news organization disseminating the news. The obvious drift from the traditional media to social media raises a lot of questions. This perhaps buttresses the submission of Littlejohn and Foss (2005) while expounding on the dependency theory, which states that audience members will always make use of the medium that they derive satisfaction from.

Methodology

Purposive sampling technique was adopted for this study. Purposive sampling is a non-probability technique where researchers intentionally select participants based on specific criteria relevant to the study's objectives, often for qualitative research. The research instrument adopted in this research was the in-depth interview conducted on heads of ninety households affected by the 2022 flood in Yenagoa, the Bayelsa State capital. This approach enabled the respondents to share their experiences and availed the researcher ample opportunity to be flexible and ask follow up questions where necessary.

Data Presentation

The heads of ninety selected households in flood affected areas of Yenagoa were interviewed and findings indicate that among the ninety households, 40 percent admitted to receiving news about the flood prediction by NIMET through social media sources, 25 percent through the traditional media while 35 percent claimed they were unaware of the pre-flood warning handed out by the Nigerian Meteorological Agency NIMET.

Discussion of Findings

RQ 1: What media strategies are used by NIMET in communicating possible flood outbreak?

The study showed that NIMET employs a combination of both traditional media and social media in disseminating news and information about flood prediction and risk management in Bayelsa

State. A combined total of 65 percent of the heads of households interviewed confirmed that they either received the message through television, radio, newspaper or social media platforms such as Facebook, Instagram or Tweeter (now X). This validates the agenda-setting theory which stated that users of the mass media the degree and tone of mass media coverage determines the perceived importance or relative salience the mass audience attaches to a given issue (Coleman and Banning, 2006).

RQ 2: How effective is NIMET's communication strategy?

Findings revealed that NIMET's communication strategy relies heavily on a mix of communication platforms. However, with about 40 percent of respondents receiving news about the forecast and pre-flood warning, through the instrumentality of the social media, 25 percent through the conventional broadcast and print media like television, radio and newspaper, while a significant 35 percent of respondents claimed to be unaware of NIMET'S messages; there is a need for the agency to fine-tune its communication strategy to attain effective communication.

RQ 3: To what extent are risk communication techniques used by NIMET?

As earlier pointed out in this work, there are risk techniques which prescribe that at the stage of conceptualizing the message to be conveyed to the mass audience, the risk communication framework should focus on bridging the existing communication gap. Consequently, the Mental Models of risk communication requires that risk communication effort targets the key knowledge deficiencies in the public (Morgan, 2002). The series of semi-structured interviews conducted on the selected households aided the respondents to describe their experiences during the 2022 flood and post flood period. Findings revealed that most of the media content generated by NIMET lacked the needed research technique to aid development of hypotheses to detect important deviations between public and expert understanding of the potential impact of natural disasters.

RQ 4: What preferred media sources do Bayelsans utilise?

Social media news serves as a catalyst of social change as the media allow for wide participation, continued flow of communication and need in public mobilization. The growth has created opportunities to fuel social change through building awareness, triggering public mobilization, encouraging civic engagement sharing knowledge, among others (Blanchard 2011) This assertion derives more credence from the opinions elicited from the respondents who hinted that the bulk of news they got about the 2022 flood was received through picture and video uploads on Facebook, twitter, WhatsApp in addition to other social media platforms. Whereas 40 percent disclosed they received news about the flood prediction by NIMET through social media sources, 25 percent said they got the news through the traditional media while 35 percent claimed they were unaware of the pre-flood prediction issued by the Nigerian Meteorological Agency (NIMET).

Conclusion

The study has established reservations about the communication strategy of the Nigerian Meteorological Agency. Furthermore, this study shower! that although the conventional platforms for mass communication such as television, radio and newspaper are very useful, the disaster management agency could further review its current communication strategy for enhanced performance.

Recommendations

The following recommendations are hereby proffered:

1. NIMET should leverage the powerful influence of social media for effective communication of its policy objectives in the quest to reach its target audience and alert them on impending natural disasters.
2. Conceptualisation of media contents directed at the public should be guided by risk communication techniques that would identify knowledge gap, thereby promoting effective communication of flood preventive, mitigation and management strategies.

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