



BEYOND FLOOD ALERTS: BROADCAST PROGRAMME FORMATS AS MECHANISMS FOR EFFECTIVE FLOOD RISK COMMUNICATION.

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Abstract

Flooding remains one of the most destructive climate-related hazards in Nigeria, with North-East Nigeria experiencing recurrent events that intersect with conflict, displacement, and infrastructural deficits. While broadcast media serve as the primary channels for disaster communication, limited empirical attention has been devoted to understanding how programme formats influence the effectiveness of flood risk communication. This study examines broadcast programme formats as communication mechanisms for flood risk communication in Borno, Adamawa, and Bauchi States between 2020 and 2023. Employing a quantitative content analysis of 583 flood-related broadcast programmes, the study reveals a significant divergence between the formats most frequently employed by broadcasters and those perceived as most effective for enhancing audience understanding of flood prevention measures. News bulletins dominated flood-related broadcasts at 23.33%, followed by jingles at 14.58%. Radio dramas and storytelling comprised only 5.32% of broadcasts but were identified as the most influential format for audience comprehension at 17.15%. Drawing on the Protective Action Decision Model and narrative communication theory. This study argues that effective flood risk communication requires not merely the transmission of warnings but the strategic use of programme formats that facilitate explanation, contextual understanding, and audience engagement. The findings demonstrate that media effects in disaster communication are shaped not only by message exposure but also by the structural and narrative characteristics of programme formats, with practical implications for broadcasters, emergency management agencies, and communication policymakers seeking to strengthen community resilience beyond emergency alerts.

Keywords: Flood Risk Communication, Broadcast Programme Formats, Disaster Preparedness, Narrative Communication, Media Effects

Introduction

Flooding has become one of the most destructive climate-related hazards worldwide. Between 2000 and 2019, floods accounted for approximately 44% of all weather-related disasters globally, affecting more than two billion people (United Nations Office for Disaster Risk Reduction [UNDRR], 2020). Recent climate assessments indicate that anthropogenic climate change has intensified extreme rainfall events and increased the likelihood of severe flooding, particularly in low- and middle-income countries, where adaptive capacity remains limited (Intergovernmental Panel on Climate Change [IPCC], 2022). Consequently, disaster risk reduction has increasingly shifted from reactive emergency response to proactive risk communication that enables vulnerable populations to anticipate hazards and adopt protective behaviors before disasters occur. Within this evolving paradigm, communication has emerged as a central mechanism through which early warning



information is translated into public action. The Sendai Framework for Disaster Risk Reduction 2015–2030 recognizes accessible, people-centred communication systems as fundamental components of disaster resilience. The effectiveness of early warnings depends not only on the accuracy of scientific forecasts but also on how well information is communicated, understood, trusted, and acted upon by exposed communities (UNDRR, 2015). This perspective represents a significant shift from viewing disaster communication merely as information dissemination to understanding it as a behavioral intervention capable of shaping risk perception, preparedness, and adaptive decision-making (Lindell & Perry, 2012).

In many developing countries, particularly across sub-Saharan Africa, broadcast media continues to serve as the most accessible and trusted platforms for communicating disaster information. Radio and television possess unique advantages that digital platforms often lack, including wider geographical coverage, lower technological barriers, multilingual broadcasting, and the ability to reach populations with limited literacy or internet access (Amanawa & Amanawa, 2023; Ogunjimi et al., 2023). However, the effectiveness of such communication extends beyond the message content alone. Increasing evidence suggests that how flood information is presented may be as important as what is communicated.

Communication scholars have long argued that message format significantly influences audience attention, comprehension, emotional engagement, information retention, and behavioral response (Nabi & Green, 2015). Program formats such as documentaries, panel discussions, interactive phone-in programs, feature stories, community dialogues, dramas, news bulletins, and public service announcements each employ different narrative structures and persuasive mechanisms. Narrative-based formats facilitate emotional identification and experiential learning, whereas interactive programs encourage dialogue and greater audience participation. In contrast, short bulletins and jingles are generally effective for rapid alerts but may provide insufficient contextual information to support long-term preparedness behaviors (Dahlstrom, 2014; Green & Brock, 2000). Despite these theoretical insights, disaster communication research has largely concentrated on message credibility, media exposure, and warning systems, with comparatively limited attention devoted to the communicative mechanisms embedded within broadcast program formats.

This limitation is particularly evident in Nigeria, where flooding has become an annual humanitarian challenge. Between 2020 and 2023, devastating floods displaced millions of residents, destroyed critical infrastructure, disrupted agricultural production, and placed unprecedented pressure on emergency management institutions (National Emergency Management Agency [NEMA], 2023). North-East Nigeria represents one of the country's most vulnerable regions because flood risks intersect with persistent insecurity, widespread displacement, infrastructural deficits, and socio-economic fragility. These interconnected vulnerabilities increase dependence on broadcast media as a primary source of disaster information while simultaneously complicating effective public communication (International Organization for Migration [IOM], 2023). Although previous Nigerian studies have examined media coverage of flooding, audience awareness, disaster reporting, and risk communication (Ezebuenyi et al., 2020; Governor et al., 2024; Onyedi & Wogu, 2023), relatively little empirical attention has been given to the programme formats through which flood messages are delivered. Existing scholarship has predominantly evaluated whether broadcasters disseminate flood information rather than investigating whether broadcast formats facilitate deeper understanding, sustained engagement, and behavioral preparedness. This study examines broadcast programme formats as communicative mechanisms that shape the effectiveness of flood risk communication in North-East Nigeria. Drawing on content analysis data derived from a larger doctoral study conducted across selected North-East Nigerian states between 2020 and 2023, the article investigates how



different broadcast formats contribute to more effective disaster communication and identifies opportunities for strengthening media-based flood preparedness within vulnerable communities.

Broadcast Programme Formats and Flood Risk Communication

The effectiveness of disaster risk communication extends beyond the availability of information to the way that information is communicated to the public. Contemporary communication scholarship argues that programme format constitutes an essential component of message design because it shapes audience attention, comprehension, emotional engagement, credibility, and ultimately behavioural response (Nabi & Green, 2015). Within flood risk communication, broadcast programme formats represent the structural and narrative forms through which information is packaged and disseminated, including news bulletins, documentaries, panel discussions, feature programmes, phone-in programmes, dramas, interviews, jingles, and public service announcements. Rather than functioning as neutral delivery channels, these formats influence how audiences interpret risk, evaluate message credibility, and decide whether to adopt the recommended protective actions (Dahlstrom, 2014).

The Protective Action Decision Model (PADM) proposed by Lindell and Perry (2012) provides a useful explanation for this relationship. The model suggests that individuals rarely directly respond to hazard information. Instead, they process messages through a series of cognitive evaluations involving message attention, comprehension, source credibility, personal relevance, and perceived efficacy before deciding whether protective action is necessary. Consequently, programme formats that encourage explanation, demonstration, dialogue, and contextual understanding may facilitate preparedness more effectively than formats designed solely for rapid information dissemination. This perspective shifts attention from the quantity of flood messages broadcast to the communication mechanisms through which those messages influence public behaviour.

Narrative communication research provides further support for this proposition. According to Green and Brock (2000), audiences become more cognitively and emotionally engaged when information is embedded within coherent stories rather than presented as isolated factual statements. Narrative-based formats, such as documentaries, radio dramas, and feature programmes, allow audiences to observe realistic experiences, identify with characters, and understand the consequences of preparedness or inaction. Similarly, Dahlstrom (2014) argued that narratives improve knowledge retention because they simplify complex scientific information without reducing its practical significance. Within disaster communication, narrative formats therefore provide opportunities to translate technical flood forecasts into meaningful experiences that audiences can easily understand and apply.

Interactive programme formats also play an increasingly key role in effective disaster communication. Unlike conventional one-way broadcasting, interactive formats facilitate audience participation through telephone calls, studio discussions, expert interviews and question-and-answer sessions. Such programmes reduce uncertainty by allowing audiences to seek clarification and contextualize official warnings within their local realities. Research across developing countries demonstrates that participatory communication strengthens public trust, improves message acceptance, and enhances preparedness because audiences become active participants rather than passive recipients of disaster information (Manyozo 2012). This participatory approach aligns closely with contemporary disaster risk reduction frameworks that advocate community-centered communication rather than top-down information dissemination.



Empirical evidence similarly demonstrates that programme format significantly influences disaster communication outcomes. Ezebuenyi, Nwedo-Nzeribe, and Okoye (2020), in their assessment of radio campaigns in southeastern Nigeria, found that repeated educational broadcasts and structured awareness programmes increased audience understanding of flood preparedness more effectively than occasional news reports. Likewise, Amanawa and Amanawa (2024) observed that audiences perceived analytical and educational flood programmes as more informative than routine political coverage because they provided explanations, expert perspectives, and practical guidance for disaster preparedness. Studies conducted outside Nigeria have reached comparable conclusions. In Bangladesh, Paul, Rashid, and Islam (2023) reported that community radio programmes incorporating local narratives and interactive discussions significantly improved household preparedness compared with conventional emergency announcements. Similarly, Mersham and Skinner (2024) found that disaster documentaries and participatory radio programmes in Southern Africa promoted greater public understanding of climate-related hazards by connecting scientific information with everyday community experiences.

Despite these advances, flood risk communication in Nigeria continues to rely predominantly on short news bulletins, public service announcements, and emergency jingles. While these formats remain indispensable for delivering immediate warnings, they often provide limited opportunities for explanation, audience engagement, or behavioural reinforcement. Akpan and Udo (2024) argue that Nigerian broadcast coverage of environmental disasters frequently prioritizes event reporting over sustained public education, thereby limiting opportunities for long-term resilience building. Similarly, Governor et al. (2024) observed that flood reporting on Nigerian television remains largely episodic, focusing on disaster events rather than continuous preparedness communication capable of influencing preventive behavior. These observations reveal an important gap within existing scholarship. Previous studies have largely evaluated media effectiveness using indicators such as audience exposure, awareness levels, credibility, or message frequency, while paying comparatively little attention to the programme formats that shape communication outcomes. Addressing this gap is essential because identifying effective programme formats offers practical guidance for broadcasters, emergency management agencies, and policymakers seeking to strengthen disaster communication beyond the transmission of warnings toward sustained community preparedness.

Methodology

Research Design

This study employed quantitative content analysis to examine how broadcast programme formats were utilized in communicating flood risk information in North-East Nigeria between 2020 and 2023. Content analysis is widely recognized as a systematic, objective, and replicable technique for examining communication content and identifying patterns embedded within media messages (Krippendorff, 2019; Neuendorf, 2017). Quantitative content analysis is particularly suited to examining programme format distribution because it allows for systematic counting and comparison across programme categories. This article is derived from a larger mixed-methods doctoral study that investigated audience perception of broadcast media messages on flooding in selected states in North-East Nigeria. While the parent study integrated survey questionnaires and in-depth interviews, the present article relies exclusively on the content analysis dataset to examine the programme formats adopted by broadcast stations in disseminating flood-related messages.

Study Area

This study was conducted in Borno, Adamawa, and Bauchi States, located in North-East Nigeria. These states were purposively selected because they experienced some of the most severe flooding incidents during the 2020–2023 period and remain priority areas for flood risk reduction initiatives



by NEMA and humanitarian organizations. According to the National Population Commission (2023), the combined population of the three states exceeds 19.3 million. Their diverse linguistic composition, including Hausa, Kanuri, Fulfulde, and other indigenous languages, makes broadcast media a critical channel for disseminating environmental and disaster-related information.

Sampling Frame and Media Selection

The sampling frame consisted of flood-related programmes broadcast by selected radio and television stations operating within the three study states between January 2020 and December 2023. Broadcast organizations were selected purposively based on three criteria: (i) regular transmission of environmental and public affairs programmes; (ii) extensive audience coverage within their respective states; and (iii) consistent dissemination of disaster-related information during the study period. Only programmes that focused substantially on flooding, flood preparedness, early warning, environmental management, emergency response, or post-flood recovery were included. General news items unrelated to flooding and duplicated broadcasts were excluded. The 2020–2023 timeframe was purposive, reflecting a period of unprecedented flooding across Nigeria, during which NEMA declared flooding a national disaster. The 2022 floods were described as the worst in a decade, affecting over 3.2 million people and displacing more than 1.4 million individuals across the country (NEMA, 2023).

Unit of Analysis and Coding Categories

The individual broadcast programme constituted the unit of analysis. Each programme was treated as a single analytical unit, regardless of its duration. The study classified programmes according to their dominant presentation format because programme structure, rather than broadcast frequency, represented the primary focus of the investigation.

The coding categories included news bulletins and updates, documentaries and special reports, radio dramas and storytelling, interactive talk shows and phone-in programmes, public service announcements (PSAs), educational segments within other programmes, community forum discussions, expert opinions through interviews, commentaries, mobile alerts and SMS campaigns, and jingles. Each programme was assigned to the category that best represented its dominant communication format.

Coding Instrument and Procedure

A structured coding guide was developed following established principles of media content analysis (Krippendorff, 2019; Neuendorf, 2017). The coding schedule captured the programme format, thematic emphasis, communication objective, presentation style, duration, source of information, and intended audience. Operational definitions were established before coding commenced to ensure consistency. Coding was undertaken systematically using predefined categories to ensure uniform application throughout the dataset. Two trained coders independently coded a random sample of 10% of the programmes to assess inter-coder reliability. The percentage agreement between coders was 89%, and Cohen's Kappa coefficient was 0.84, indicating substantial agreement. Disagreements were resolved through discussion and consensus.

Data Analysis

The coded data were entered into Microsoft Excel for organization and preliminary cleaning before being analyzed using the Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistical techniques, including frequencies, percentages, and cross-tabulations, were employed to examine the distribution of broadcast programme formats used in flood risk communication.



Scope and Delimitation

The present analysis is limited to the content analysis component of the larger doctoral study. While the parent study included survey questionnaires and in-depth interviews, the findings presented in this article reflect only broadcast content characteristics. Consequently, references to audience perception or understanding in the results section derive from the survey component of the broader research, which was reported separately in subsequent publications.

Results

The findings presented in this section derive from the content analysis component of the broader doctoral study. Table 1 presents the findings from the content analysis of broadcast programmes, while Table 2 presents the findings from the survey component investigating audience perceptions of different programme formats. These complementary datasets reveal the divergence between broadcast practice and audience preferences.

Distribution of Broadcast Programme Formats

The content analysis revealed that broadcast organizations relied on a range of programme formats to communicate flood awareness and prevention messages during the 2020–2023 flood seasons. However, the distribution of these formats was uneven, indicating a clear preference for rapid information delivery over explanatory or participatory communications. As presented in Table 1, news bulletins and updates constituted the dominant programme format across the three states, accounting for approximately 23% of all flood-related broadcasts. This pattern was remarkably consistent across Borno (22.70%), Adamawa (25.34%), and Bauchi (22.62%), suggesting that broadcasters adopted a common strategy centered on the timely dissemination of flood alerts and situational updates. The second most frequently used format was jingles, representing approximately 14–15% of the broadcast content across the three states. Interactive talk shows and phone-in programmes accounted for approximately 11–12% of broadcasts, demonstrating some effort to encourage audience engagement, although these formats remained considerably less common than news bulletins. Public service announcements and educational segments contributed a moderate share of programming, whereas documentaries, expert interviews, community forums, and special reports appeared only occasionally.

Table 1: Distribution of broadcast programme formats for flood awareness and prevention messages:

Programme Format	Borno (n=185)	%	Adamawa (n=146)	%	Bauchi (n=252)	%	Total (N=583)	%
News bulletins and updates	42	22.7	37	25.34	57	22.62	136	23.33
Documentaries and special reports	6	3.24	5	3.42	11	4.37	22	3.77
Radio dramas and storytelling	9	4.86	7	4.79	15	5.95	31	5.32
Interactive talk shows and phone-in programmes	23	12.43	17	11.64	28	11.11	68	11.66
Public service announcements (PSAs)	25	13.51	14	9.59	31	12.3	70	12.01
Educational segments within other programmes	17	9.19	12	8.22	23	9.13	52	8.92
Community forum discussions	7	3.78	5	3.42	10	3.97	22	3.77
Expert opinions through interviews	12	6.49	11	7.53	14	5.56	37	6.35
Commentaries	9	4.86	8	5.48	16	6.35	33	5.66
Mobile alerts and SMS campaigns	8	4.32	7	4.79	12	4.76	27	4.63
Jingles	27	14.59	23	15.75	35	13.89	85	14.58
None of the above	0	0	0	0	0	0	0	0
Total	185	100	146	100	252	100	583	100

Source: Field Study, 2025

The findings indicate that flood communication in North-East Nigeria was dominated by concise and information-oriented programme formats designed primarily to deliver immediate warnings rather than provide sustained public education. Although this strategy enhances the speed of information



dissemination during emergencies, it offers comparatively fewer opportunities for detailed explanation, contextualization, or audience interaction.

Programme Formats Perceived to Enhance Understanding

While news bulletins dominated broadcast output, a different pattern emerged regarding the programme formats considered most effective for improving audience understanding of flood prevention messages. The findings presented in Table 2 demonstrate that respondents distinguished between programme frequency and effectiveness.

Table 2: Programme Formats Perceived as Most Influential for Understanding Flood Prevention Messages:

Programme Format	Borno (n=185) %		Adamawa (n=146) %		Bauchi (n=252) %		Total (N=583) %	
News bulletins and updates	19	10.27	17	11.64	25	9.92	61	10.46
Documentaries and special reports	25	13.51	21	14.38	34	13.49	80	13.72
Radio dramas and storytelling	32	17.3	25	17.12	43	17.06	100	17.15
Interactive talk shows and phone-in programmes	21	11.35	14	9.59	26	10.32	61	10.46
Public service announcements (PSAs)	6	3.24	5	3.42	15	5.95	26	4.46
Educational segments within other programmes	13	7.03	15	10.27	21	8.33	49	8.4
Community forum discussions	18	9.73	14	9.59	24	9.52	56	9.61
Expert opinions through interviews	20	10.81	16	10.96	22	8.73	58	9.95
Commentaries	11	5.95	6	4.11	17	6.75	34	5.83
Mobile alerts and SMS campaigns	7	3.78	4	2.74	11	4.37	22	3.77
Jingles	13	7.03	9	6.16	14	5.56	36	6.17
None of the above	0	0	0	0	0	0	0	0
Total	185	100	146	100	252	100	583	100

Source: Field Study, 2025

The analysis showed that radio dramas and storytelling were perceived as the most influential programme format for enhancing the understanding of flood prevention messages, accounting for approximately 17.15% of the responses. This was followed by documentaries and special reports (13.72%), while interactive talk shows and phone-in programmes accounted for 10.46%. In comparison, news bulletins and updates, despite being the most frequently broadcast format, received substantially lower ratings as mechanisms for promoting audience understanding. Public service announcements were identified as the least influential programme format, accounting for only 4.46% of the responses. These findings suggest that audiences assign greater educational value to programme formats that provide narrative development, practical demonstrations, expert explanation, and opportunities for interaction than to short informational broadcasts.

Emerging Pattern

Taken together, these findings reveal an important communication pattern. Broadcast stations predominantly rely on high-frequency, short-duration formats, such as news bulletins and jingles, to disseminate flood information. However, audiences perceived narrative-based and interactive formats, including dramas, documentaries, and discussion programmes, as substantially more effective for improving their understanding of flood prevention measures. This divergence suggests that current broadcasting practices prioritize rapid information transmission over deeper audience engagement. While news bulletins remain indispensable for communicating urgent warnings, the limited use of explanatory and participatory programme formats may constrain the capacity of broadcast media to promote sustained learning, strengthen risk perception, and encourage long-term preparedness behaviours.



Discussion

This study examined how broadcast programme formats function as communication mechanisms for flood risk communication in North-East Nigeria, moving beyond conventional assessments that focus primarily on the quantity or frequency of disaster-related broadcasts. The findings demonstrate a clear divergence between the program formats most frequently employed by broadcasters and those perceived by audiences as the most effective in enhancing their understanding of flood preparedness. While news bulletins and brief updates dominated flood-related broadcasts during the study period, respondents considered narrative and interactive formats, particularly radio dramas, documentaries, and discussion programmes, to be more effective in improving comprehension of flood prevention measures. These findings suggest that the effectiveness of flood risk communication depends not only on message exposure but also on the structure, presentation, and communicative characteristics of broadcast programmes.

The Primacy of News Bulletins and Its Limitations

The predominance of news bulletins observed in this study reflects the conventional emergency communication model widely adopted by broadcast media in Nigeria, where disaster communication is primarily organized around the rapid dissemination of warnings and situational updates. This approach is indispensable during periods of imminent flood risk because it enables broadcasters to provide timely information to large audiences. However, the present findings indicate that although news bulletins are effective in transmitting information quickly, they contribute less to audience understanding than programme formats that provide explanation, demonstration, and contextual interpretation. This observation supports the Protective Action Decision Model proposed by Lindell and Perry (2012), which argues that individuals rarely adopt protective behaviour solely because they receive warning information. Rather, audiences interpret hazard information through multiple cognitive processes involving attention, message comprehension, perceived credibility, personal relevance, and response efficacy before deciding whether to take protective action. Consequently, programme formats that encourage explanation and sustained engagement may facilitate preparedness more effectively than those designed solely for rapid information transmission.

The Power of Narrative Formats

A significant finding is that radio dramas and storytelling appeared as programme formats that contributed most strongly to audience understanding, despite receiving considerably less broadcast attention than news bulletins. This finding reinforces narrative communication theory, which maintains that audiences process information more effectively when scientific or technical messages are embedded within coherent stories that reflect familiar experiences (Green & Brock, 2000; Dahlstrom, 2014). Narrative programmes provide opportunities to demonstrate the consequences of preparedness and inaction through relatable characters and realistic situations, thereby strengthening both cognitive understanding and emotional engagement. Unlike brief factual reports, dramas and documentaries enable audiences to connect flood risks with everyday experiences, making preventive actions easier to understand and more memorable.

The concept of "transportation" (Green & Brock, 2000) offers a compelling explanation for this finding. When audiences become immersed in a narrative, they are less likely to counter-argue against the message, more likely to develop emotional connections with characters, and better able to remember information presented within the narrative context. For flood risk communication, this means that hearing stories of families who prepared for floods and survived, or communities that failed to prepare and suffered losses, creates an emotional impact that strengthens memory and motivates behavioral change. Additionally, narratives provide what Dahlstrom (2014) describes as "cognitive simplification," the capacity to translate complex scientific concepts into accessible,



relatable experiences. Technical flood forecasts involving meteorological data, hydrological models, and probabilistic predictions can be overwhelming for non-expert audiences. Narratives break down this complexity by showing what these predictions mean for real people, homes, and livelihoods.

Interactive Formats and Audience Engagement

The relatively robust performance of documentaries and interactive discussion programs further highlights the importance of participatory communication in disaster risk reduction. Documentary programs provide sufficient time to explain the causes of floods, demonstrate preparedness strategies, and present expert perspectives alongside community experiences. Likewise, discussion programs and phone-in broadcasts allow audiences to seek clarification, ask questions, and relate official warnings to their local circumstances. These characteristics are increasingly recognized as essential components of effective disaster communications.

Interactive formats operate through mechanisms distinct from narrative formats. Phone-in programmes and community discussions reduce uncertainty by enabling audiences to ask questions, challenge assumptions, and contextualize official warnings within local realities. This participatory process strengthens Manyozo (2012) term "communication ownership," as audiences become active participants in risk communication rather than passive recipients. When audiences participate in discussions, they are more likely to internalize information and translate it into protective action because the information has been personally relevant and socially validated.

Integrating the Findings with Theoretical Frameworks

The findings of this study align closely with the Protective Action Decision Model in several respects. First, the model's emphasis on cognitive processing explains why narrative and interactive formats outperform informational formats. News bulletins may capture attention but often fail to facilitate deeper comprehension or establish personal relevance. In contrast, narratives and interactive discussions engage audiences at multiple cognitive levels: attention is sustained through storytelling, comprehension is enhanced through explanation and demonstration, personal relevance is established through relatable characters and community experiences, and response efficacy is demonstrated through realistic examples of successful preparedness. Second, the findings extend PADM by highlighting the role of programme format as a mediating variable in the communication process. The model treats message characteristics as important but does not explicitly address how format shapes cognitive processing. This study demonstrates that format is not merely a delivery mechanism but a constitutive element of the message itself. The same flood warning, when embedded in a drama rather than a news bulletin, may generate various levels of attention, comprehension, and behavioural intention. Third, the findings reinforce narrative communication theory's emphasis on "transportation" and "cognitive simplification." The high rating of radio dramas and documentaries suggests that audiences in North-East Nigeria, like audiences elsewhere, respond positively to narratives that translate technical information into accessible stories. This finding has important implications for disaster communication design: rather than asking whether audiences respond to factual warnings alone, communicators should consider how narratives can enhance understanding and motivation.

Contextual Factors Shaping Broadcast Practice and Audience Reception

The findings must be understood within the specific context of North-East Nigeria, where flood risks intersect with conflict, displacement, and infrastructural deficits. These contextual factors shape both broadcast practice and audience reception in several ways. First, the ongoing conflict and insecurity in parts of Borno and Adamawa States constrain broadcasters' capacity to produce sophisticated programmes such as documentaries and dramas. Producing narrative formats requires field reporting,



studio production time, and personnel; resources that may be limited in conflict-affected areas. Broadcasters may default to news bulletins and jingles because these formats are cheaper, faster to produce, and less dependent on stable security conditions.

Second, displacement affects audience familiarity with and access to different program formats. Internally displaced persons may have irregular access to radio or television, limiting their exposure to longer or more complex programs. Broadcasters seeking to reach displaced populations may prioritize short, repetitive messages that can be understood quickly and remembered, even with intermittent access.

Third, infrastructural deficits, particularly unreliable electricity supply and limited receiver availability, affect how audiences engage with broadcast content. Programmes that require sustained attention may be less accessible in areas where power outages disrupt viewing or listening. Conversely, short formats that can be consumed in brief intervals may be more practical for audiences with limited access to reliable broadcast signals.

Fourth, the diverse linguistic composition of North-East Nigeria creates challenges for disaster communication. Broadcasters must decide which languages to use and how to ensure that messages reach all linguistic groups. Narrative formats may be particularly effective in multilingual contexts because they can incorporate multiple languages and culturally relevant storytelling traditions. However, producing such formats in multiple languages requires additional resources and expertise. These contextual factors highlight the importance of tailoring communication strategies to local realities. While the findings suggest that narrative and interactive formats are generally more effective, broadcasters and emergency management agencies must consider how these formats can be adapted to conflict-affected, displacement-affected, and infrastructure-constrained contexts.

Situating Nigerian Findings within the Broader African Disaster Communication Literature

The empirical evidence generated from this study contributes to an expanding corpus of scholarship examining the intersection of media formats, audience engagement, and disaster preparedness across the African continent. While the specific communication ecology of North-East Nigeria presents distinctive characteristics, the findings resonate with emergent patterns observed in diverse African contexts. Ejem, Ben-Enukora, Okeke, and Nwokeocha (2023) investigated the social amplification and attenuation of flood risk perception through broadcast media risk messages during the 2022 floods in selected Southern Nigerian states. Their research demonstrated that the persuasive influence of flood risk communications depended less on broadcasting frequency than on message framing, source credibility, and perceived personal relevance. Similarly, Kusugh, Kente, and Suemo (2024) examined audience responses to broadcast media reportage on flood forecasts in Nigeria, revealing that audience confidence and comprehension increased substantially when flood forecasts were contextualized through expert explanations, educational discussions, and practical preparedness guidance. Extending the geographical scope, Raphela and Ekeke (2025) examined resilience and the dissemination of flood disaster early warning messages in a South African township, concluding that flood early warning systems achieved considerably greater effectiveness when communication strategies incorporated community participation, trusted local communication channels, and indigenous languages.

Bailon, Boersma, Orellana-Rodriguez, and Van Den Homberg (2025) analysed media framing of disaster impact in online news media through a case study of flood risk management in Malawi. Their research revealed that media reports concentrating exclusively on disaster events contributed minimally to long-term preparedness outcomes. In contrast, explanatory reporting that incorporated



local experiential knowledge, preventive guidance, and contextual interpretation demonstrably enhanced public understanding of flood risks and encouraged adaptive behavior. The importance of audience-centred communication has become increasingly evident across platforms. Salley, Fox, and Schubert (2025) examined flood risk communication through organizational and community social media posts using natural language processing techniques, demonstrating that communication achieved substantially greater effectiveness when institutional messages reflected public information needs rather than organizational priorities.

Recent Nigerian evidence further strengthens the present findings. A study published in the *International Journal of Disaster Risk Reduction* (2025) investigated flood risk communication, perception, and precautionary behaviors among residents in a flood-prone state in North-central Nigeria, establishing that access to flood risk information significantly improved precautionary behavior only when residents possessed an adequate understanding of flood hazards and clearly comprehended recommended protective actions. Turere and Nyaga (2025) examined participatory communication and flood preparedness in Kenya, demonstrating that participatory communication models incorporating local knowledge, community dialogue, and trusted communication intermediaries generated higher levels of public preparedness than conventional top-down warning systems.

The present study aligns with scholarship examining the broader landscape of environmental communication in Nigeria. Dami (2023) argues that environmental communication functions as a critical mechanism for translating scientific knowledge about environmental risks into public understanding and actionable behavior. Furthermore, Dami and Badu (2025) examine the structural and institutional challenges confronting environmental journalism in Nigeria, highlighting how resource constraints, limited specialized expertise, and editorial priorities fundamentally shape the quality and effectiveness of environmental reporting. This analysis provides essential contextual understanding for why Nigerian broadcasters default to news bulletins and jingles rather than investing in more resource-intensive narrative and interactive formats. Collectively, these recent studies indicate that disaster communication research across Africa is increasingly pivoting from transmission-oriented models towards audience-centred communication frameworks. The present study advances this emerging body of knowledge by demonstrating that broadcast programme format constitutes a critical communication mechanism through which flood risk information is interpreted, understood, and translated into preparedness action.

Limitations of the Study

This study provides valuable insights into broadcast programme formats for flood risk communication, but several limitations should be acknowledged. First, the content analysis focused exclusively on broadcast content and did not directly measure audience behavioral outcomes. Although the survey component findings indicate audience perceptions of format effectiveness, the present analysis cannot establish a causal relationship between programme formats and actual preparedness behaviors. Second, the study's geographical scope was limited to three states in North-East Nigeria. Although these states were purposively selected due to their vulnerability to flooding, the findings may not be generalizable to other regions with diverse cultural, linguistic, or infrastructural contexts. Third, the analysis did not examine the quality or content of individual programmes within each format category. It is possible that some news bulletins were more educational than others, or that some dramas were more effective than others, depending on production quality, message clarity, and cultural relevance. Fourth, the study's period (2020–2023) may not fully capture longer-term trends in flood communication. Fifth, although the study employed inter-coder reliability measures, the coding process was inherently subjective to some degree. Sixth,



programme duration may be a confounding variable, as the present analysis treated each programme as a single unit regardless of duration.

Conclusion

This study examined how broadcast programme formats function as communication mechanisms for flood risk communication in North-East Nigeria, moving beyond conventional assessments that focus primarily on the quantity or frequency of disaster-related broadcasts. The findings demonstrate a clear divergence between the program formats most frequently employed by broadcasters and those perceived by audiences as the most effective in enhancing their understanding of flood preparedness. While news bulletins and brief updates dominated flood-related broadcasts during the study period, respondents considered narrative and interactive formats, particularly radio dramas, documentaries, and discussion programmes, to be more effective in improving comprehension of flood prevention measures. These findings suggest that the effectiveness of flood risk communication depends not only on message exposure but also on the structure, presentation, and communicative characteristics of the broadcast programs. The predominance of news bulletins observed in this study reflects the conventional emergency communication model widely adopted by broadcast media in Nigeria, where disaster communication is primarily organized around the rapid dissemination of warnings and situational updates. This approach is indispensable during periods of imminent flood risk because it enables broadcasters to provide timely information to large audiences. However, the present findings indicate that although news bulletins are effective in transmitting information quickly, they contribute less to audience understanding than programme formats that provide explanation, demonstration, and contextual interpretation.

Radio dramas and storytelling emerged as programme formats perceived to contribute most strongly to audience understanding, despite receiving considerably less broadcast attention than news bulletins. This finding reinforces narrative communication theory, which maintains that audiences process information more effectively when scientific or technical messages are embedded within coherent stories that reflect familiar experiences. The concepts of "transportation" (Green & Brock, 2000) and "cognitive simplification" (Dahlstrom, 2014) provide compelling explanations for why narratives enhance understanding and retention of flood risk information.

The findings correspond closely with recent evidence from Nigeria and other African countries, collectively indicating that disaster communication research is increasingly shifting from transmission-oriented models to audience-centred communication frameworks. The divergence between what broadcasters provide (news bulletins) and what audiences find effective (dramas and documentaries) represents a missed opportunity for strengthening community resilience. Addressing this gap requires a strategic reorientation of disaster communication from rapid information delivery to sustained public education. As flood events become more frequent and severe across Nigeria, improving the quality of programme formats may prove as important as improving the accuracy of flood forecasts themselves. This study therefore calls for broadcasters, emergency management agencies, and communication policymakers to invest in narrative and interactive programme formats that facilitate explanation, participation, and long-term learning. Such investments will not only enhance the effectiveness of flood risk communication but also contribute to broader disaster resilience goals articulated in the Sendai Framework and Nigeria's national disaster management policies.

Recommendations for Future Research

While this study provides valuable insights into the relationship between broadcast programme formats and flood risk communication effectiveness, several avenues for future research remain. First,



experimental studies examining the comparative effectiveness of different programme formats on actual preparedness behaviors would strengthen the evidence base for policy recommendations. Second, qualitative research exploring audience experiences with different programme formats would provide a deeper understanding of the mechanisms through which narratives and interactive formats influence risk perception and preparedness. Third, comparative studies across different Nigerian regions would examine whether the pattern observed in North-East Nigeria holds in other contexts with diverse cultural, linguistic, and infrastructural characteristics. Fourth, research examining the production processes of flood communication programmes would identify the constraints and opportunities facing broadcasters in developing educational and narrative formats. Fifth, longitudinal studies tracking changes in programme formats over time would reveal whether broadcasters are adapting their strategies in response to recurring flood events and evolving audience needs.

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