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Assessing the Effectiveness of Television Coverage in Enhancing Disaster Preparedness: A Case Study of ZNBC Coverage on Kanyama Floods in Lusaka District

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Abstract

Flooding remains one of Zambia's most recurrent and destructive natural disasters, disproportionately affecting informal settlements such as Kanyama in Lusaka District, where inadequate drainage, rapid urbanisation, and poor infrastructure continue to heighten vulnerability [20, 22]. As climate variability intensifies extreme rainfall patterns across Southern Africa, television remains a critical communication channel for providing timely hazard information and promoting community preparedness [17, 3]. This study assessed the effectiveness of Zambia National Broadcasting Corporation (ZNBC) television coverage in enhancing flood-related disaster preparedness among residents of Kanyama. Guided by the Disaster Preparedness Model [15] and the Development Communication Model [19], the study examined awareness levels, preparedness behaviours, and perceptions of the clarity, timeliness, and relevance of ZNBC's flood communication. Employing a mixed-methods exploratory design, the study sampled 50 Kanyama residents using questionnaires and 15 institutional stakeholders from organisations such as the Disaster Management and Mitigation Unit, the Lusaka City Council, and the Zambia Red Cross Society through in-depth interviews. Data were analysed using descriptive statistics and thematic analysis, while triangulation ensured data validity. Findings show that although 78 percent of residents had previously watched flood-related content on ZNBC, only 22 percent reported that the messages were very clear due to the heavy use of technical terminology and predominantly English-language broadcasts that many viewers struggled to interpret [12, 16]. While 68 percent of viewers reported increased hazard awareness after watching ZNBC coverage, preparedness behaviour remained limited, with 76 percent engaging only in low-cost actions such as clearing drainage channels, and 32 percent reporting that they took no action due to poverty, unstable electricity supply, or limited television access factors consistent with regional findings in other African informal settlements [14, 1]. Stakeholders further revealed inconsistencies in message timeliness and limited localisation of warnings for high-risk communities like Kanyama. The study concludes that ZNBC television coverage contributes significantly to awareness creation but its overall impact on preparedness is constrained by linguistic barriers, socioeconomic challenges, and insufficiently localised disaster messaging. It recommends that ZNBC adopt more local languages, enhance collaboration with disaster management stakeholders, increase the frequency and localisation of flood alerts, and complement television coverage with multi-channel communication strategies to strengthen community preparedness and resilience.

Keywords: Disaster Preparedness, Flood Communication, Television Coverage, ZNBC, Kanyama, Zambia

1. Introduction

1.1 Background

Flooding accounts for nearly 40% of global natural hazards, and climate change continues to intensify rainfall variability and storm impacts [20]. In developing countries, vulnerable populations often live in informal settlements with weak infrastructure and limited access to risk information. Effective preparedness therefore depends on timely communication, and television

remains a key medium because its visual and audio format strongly influences risk perception and protective behaviour [3, 17, 13, 18].

In Sub-Saharan Africa, rapid urbanisation has increased flood exposure in informal settlements, where poverty, poor drainage, and inadequate housing heighten vulnerability [14]. Although television is widely used for disaster communication, its effectiveness is often limited by language barriers, power outages, and insufficient localisation of messages [1]. Evidence from Zimbabwe, Malawi, and Botswana shows that while TV boosts awareness, it rarely leads to sustained preparedness due to socioeconomic constraints and lack of actionable guidance [11, 10, 6].

Zambia faces similar challenges, especially in Lusaka's informal settlements such as Kanyama, where recurrent floods damage property and threaten health [22]. ZNBC, as the national public broadcaster, is mandated to disseminate disaster alerts, yet research indicates its messages are often delayed, overly technical, and insufficiently targeted toward high-risk communities [12, 16, 8]. Limited electricity and reliance on shared televisions further constrain access.

Given these gaps, this study examines how effectively ZNBC's flood coverage raises awareness, shapes preparedness behaviours, and addresses the information needs of residents in Kanyama.

1.2 Statement of the Problem

Kanyama experiences severe and recurrent flooding, yet there is limited empirical evidence on how well ZNBC's television coverage supports disaster preparedness among residents. Although the broadcaster is mandated to provide timely and accessible information, existing studies indicate that messages are often insufficiently localised, delivered mainly in English, delayed due to institutional bottlenecks, and presented with technical meteorological terminology that many viewers struggle to interpret [12, 16]. Socioeconomic constraints such as poverty, unstable electricity and limited access to television sets further restrict residents' capacity to act upon televised warnings [1]. The degree to which ZNBC's coverage enhances awareness, promotes preparedness actions, or satisfies the information needs of high-risk communities like Kanyama remains largely undocumented. This study therefore seeks to fill this gap.

1.3 Objectives

1.3.1 General Objectives

To assess the effectiveness of ZNBC television coverage in enhancing disaster preparedness in Kanyama Compound, Lusaka.

1.3.2 Specific Objectives

1. To evaluate how ZNBC television coverage as a key broadcaster influences public awareness of flood risks in Kanyama.
2. To examine the extent to which ZNBC television coverage shapes disaster preparedness behaviours among residents.
3. To assess the clarity, timeliness, and relevance of flood-related content broadcast on ZNBC television.

1.4 Research Questions

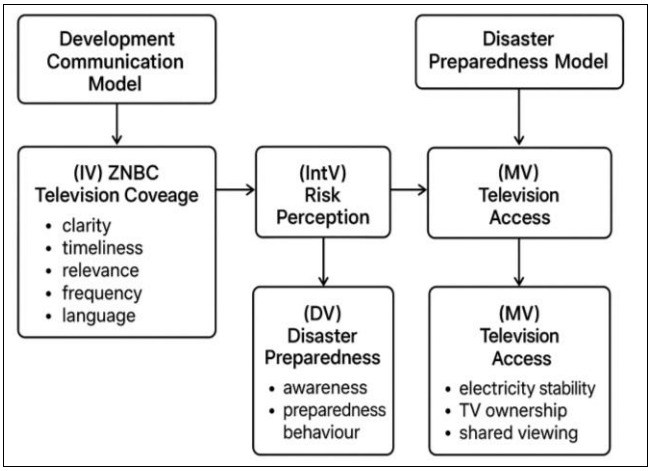
1. How does ZNBC television coverage influence awareness of flood risks in Kanyama?
2. To what extent does ZNBC television influence residents' preparedness behaviours?
3. How clear, timely, and relevant is the disaster-related content aired on ZNBC television?
4. How do residents of Kanyama assimilate and interpret televised disaster information?
5. What are the views of institutional stakeholders on the effectiveness and coordination of ZNBC's flood coverage in promoting disaster preparedness?

1.5 Theoretical Framework

This study is guided by two theoretical frameworks: the Disaster Preparedness Model [15] and the Development Communication Model [19]. Together, they explain how televised disaster information shapes awareness, interpretation, and preparedness among vulnerable communities such as Kanyama.

The Disaster Preparedness Model outlines how individuals move from awareness and risk appraisal to decision-making and ultimately adopting protective actions [15]. Preparedness improves when people trust the source, understand the hazard, and believe the recommended actions are achievable [7]. This model helps explain how ZNBC broadcasts influence residents' risk perception and responses.

The Development Communication Model emphasises participatory, community-focused communication that translates technical information into accessible messages [19]. It highlights the importance of collaboration among ZNBC, DMMU, ZMD, LCC, and humanitarian agencies to ensure messages are clear, localised, and relevant.



Source: Primary Source

Fig 1: Diagram for the theoretical framework and variables

In this framework, the independent variable is ZNBC's television coverage-specifically message clarity, timeliness, language, frequency, and relevance [9]. The dependent variable is disaster preparedness among Kanyama residents, reflected in awareness and actions such as clearing drainage or safeguarding household items [15]. Access to television, electricity reliability, and socioeconomic conditions act as moderating variables while risk perception serves as an

intervening variable influencing how residents interpret and act on warnings [18].

2. Literature Review

2.1 Influence of Television Coverage as a Key Broadcaster on Public Awareness of Flood Risks

Television is one of the most influential platforms for communicating natural hazards because it combines visuals, expert narration, and real-time reporting, which strengthens risk perception and public understanding [3, 17]. Globally, countries such as Bangladesh, India, Japan, and the Philippines rely heavily on televised alerts for early warning dissemination [4]. Clear, credible, and repeated messages are known to improve awareness [18, 13].

In Africa, television plays a key role in urban disaster communication, though its impact varies due to electricity shortages, language barriers, and poor localisation of messages [14]. Studies from Malawi, Botswana, and Zimbabwe show that English-only broadcasts and technical jargon limit comprehension for low-literacy audiences [11, 6, 10].

In Zambia, ZNBC is mandated to deliver disaster information, but research indicates that its flood coverage often lacks simplification, translation, and settlement-specific details [12, 16]. This weakens public understanding in high-risk areas like Kanyama. Despite these challenges, ZNBC remains a primary and trusted awareness source due to its national reach and use of visuals and community testimonies.

2.2 Influence of Television Coverage on Disaster Preparedness Behaviours

Television can shape preparedness by modelling protective actions and reinforcing risk perception [15, 7]. Visual demonstrations such as emergency kits or securing property encourage imitation through observational learning [3, 17].

However, in many developing contexts, awareness rarely leads to strong preparedness because socioeconomic constraints limit residents' ability to act [14]. Preparedness improves when broadcasters emphasise low-cost, practical steps rather than expensive recommendations that informal settlement households cannot afford [2].

In Zambia, ZNBC's impact on behaviour is mixed. While its coverage raises risk perception, many broadcasts lack clear, step-by-step guidance suited to informal settlements [12, 8]. Structural challenges such as poor drainage, unstable housing and inconsistent electricity also reduce behavioural follow-through [1]. Nevertheless, preparedness improves when broadcasts include community voices, demonstrations, and locally relevant examples, supporting participatory communication principles [19].

2.3 Clarity, Timeliness and Relevance of Flood-Related Television Content

Clear, timely, and locally relevant messages are essential for effective disaster communication. Simple language and visuals improve viewer comprehension, while technical jargon reduces it [13, 17]. Timely alerts are critical for fast-onset hazards, and delayed broadcasts weaken preparedness and public trust. Relevance increases when messages are localised and tailored to specific community risks [4].

Across Africa, message clarity and relevance are often undermined by delays, lack of translation, and reliance on English [14]. In Zambia, ZNBC frequently delivers flood updates during scheduled news instead of real-time alerts, reducing timeliness [16]. Heavy use of meteorological terminology from ZMD further reduces clarity for low-literacy audience [12]. Content often focuses on national-level impacts, with limited guidance specific to informal settlements like Kanyama [22].

Despite these limitations, ZNBC can significantly improve communication outcomes by expanding use of local languages, visuals, and community-specific recommendations.

2.4 Establishment of Research Gaps

Existing global and African literature recognises the importance of television in shaping disaster awareness and preparedness, yet several gaps remain, particularly for informal urban settlements such as Kanyama. Most international studies are based in developed contexts with high literacy, steady electricity and universal media access [17, 4], limiting their relevance to low-income communities. Regional African research highlights barriers such as language, poverty and infrastructural limitations, but it often generalises across countries and seldom focuses on informal settlements where risk exposure and communication needs are unique [14].

Zambian studies acknowledge ZNBC's importance but provide limited empirical assessment of how its flood-related messages are interpreted or acted upon in high-risk communities [12, 16]. There is also little research evaluating the clarity, timeliness and relevance of ZNBC broadcasts, and almost no evidence linking television exposure to actual preparedness behaviours among urban low-income residents. Furthermore, few local studies investigate institutional coordination between ZNBC, DMMU, ZMD and the LCC, despite such collaboration being essential for effective disaster communication.

These gaps justify the present study's focus on how ZNBC television coverage influences awareness, message interpretation and preparedness actions in Kanyama, using a mixed-methods design to capture both community experiences and institutional perspectives.

3. Research Methodology

3.1 Research Design

The study employed a *mixed-methods design*, combining quantitative surveys and qualitative interviews to capture both measurable trends and deeper contextual insights. This approach was justified because disaster preparedness involves both observable behaviours and subjective perceptions that cannot be fully understood through a single method [5]. Quantitative data enabled statistical assessment of awareness and preparedness patterns, while qualitative interviews provided institutional perspectives on communication processes and challenges.

3.2 Target Population

The target population consisted of two groups: Kanyama residents exposed to flood-related risks and institutional stakeholders directly involved in disaster communication and management. These included officials from ZNBC, the Disaster Management and Mitigation Unit (DMMU), the Zambia Meteorological Department (ZMD), the Lusaka City Council (LCC), and the Zambia Red Cross Society (ZRCS). These categories were selected because they represent both the receivers and producers of flood-related information.

3.3 Sampling Design
A combination of *purposive and convenience sampling* was used. Purposive sampling helped identify key institutional respondents with specialised knowledge of disaster communication, while convenience sampling was used to reach residents who were available and willing to participate within Kanyama's densely populated environment. This approach was justified due to the settlement's informal structure, high mobility, and the need to capture a diverse but accessible group of participants.

3.4 Sample Size Determination
The study involved *50 residents* and *15 institutional stakeholders*, making a total sample of 65 respondents. The sample size was determined based on feasibility, population density, and the need for adequate representation of perceptions and practices within the community. For qualitative interviews, 15 institutional stakeholders were sufficient to reach thematic saturation, while 50 resident responses provided enough quantitative data to identify statistical trends relevant to the objectives.

3.5 Data Collection Methods
Two primary methods were used:
1. *Structured questionnaires* administered to residents to capture quantitative data on awareness, preparedness behaviours, and perceptions of the clarity and timeliness of ZNBC broadcasts.
2. *Semi-structured interviews* conducted with institutional stakeholders to obtain detailed insights into communication strategies, coordination, and operational challenges.

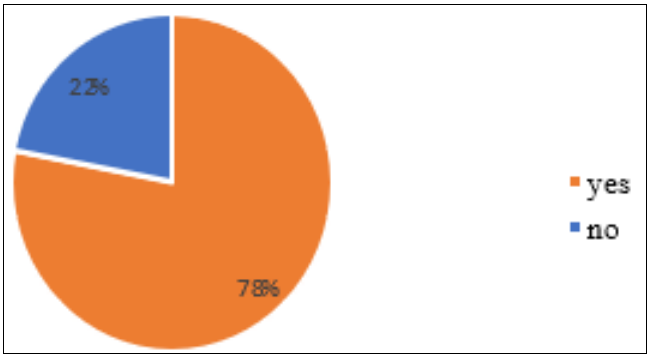
   These tools were selected because they complemented each other and allowed both numerical measurement and deeper qualitative understanding.

3.6 Data Analysis
Quantitative data were coded and analysed using descriptive statistics, frequencies, and percentages to identify patterns in awareness and behaviour. Tables, charts, and graphs were used to present these results clearly. Qualitative data from interviews were analysed thematically, allowing recurring ideas, institutional perspectives, and communication issues to be grouped into meaningful themes aligned with the study objectives.

3.7 Triangulation
Methodological triangulation was applied by comparing findings from surveys, interviews, and documentary review. This ensured accuracy, improved validity, and strengthened interpretations by confirming whether results from different sources supported each other. Triangulation was essential in this study because disaster communication involves multiple stakeholders and requires validation from both community and institutional perspectives.

4. Results
4.1 Presentation of research Findings
4.1.1 Background Characteristics of the Respondents
The background characteristics show that the majority of respondents were between 21 and 40 years (62%), which aligns with the youthful demographic of Kanyama Compound. Slightly more females than males participated in the survey, and most respondents (74%) had lived in Kanyama for more than five years, increasing their exposure to repeated flooding events. Education levels varied, although the majority had completed secondary school, which influenced how easily they understood ZNBC broadcast messages. The institutional stakeholders interviewed included representatives from ZNBC, the Zambia Meteorological Department (ZMD), the Disaster Management and Mitigation Unit (DMMU), the Zambia Red Cross Society (ZRCS), and Lusaka City Council (LCC), most of whom had more than three years of experience in disaster management communication.

4.1.2 Objective One: Awareness of Flood Risks



Source: Primary Data

Fig. 2: Residents' Exposure to Flood-Related Television Content

The results showed that 78% of residents had watched flood-related programs or announcements on ZNBC, indicating high exposure to televised disaster information.

Table 1: Impact of ZNBC Coverage on Awareness

Impact on awareness	Frequency (n)	Percentage (%)
Yes, significantly	18	36
Yes, somewhat	16	32
Not sure	10	20
No	6	12
Total	**50**	**100%**

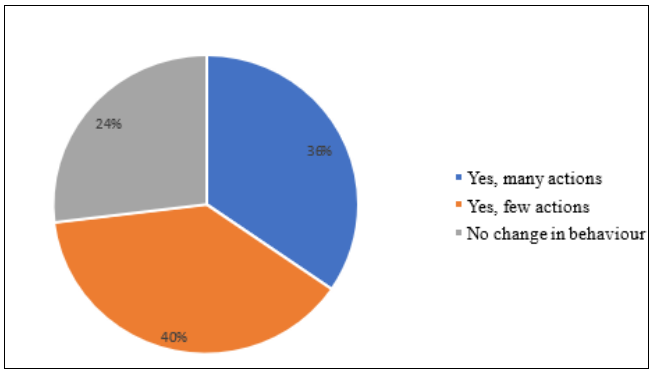
Source: Primary Data

Among those exposed, 68% reported improved awareness of flood risks due to ZNBC coverage. They explained that images of damaged homes and affected families increased their understanding of flood dangers.

However, only 22% of residents stated that the messages were very clear. Many struggled with technical meteorological language, consistent with what stakeholders from ZMD and ZNBC confirmed: that broadcasts rely heavily on technical reports without simplification. Stakeholders also acknowledged that although ZNBC is a major broadcaster, it lacks a dedicated disaster

communication unit, which affects message clarity and localisation.

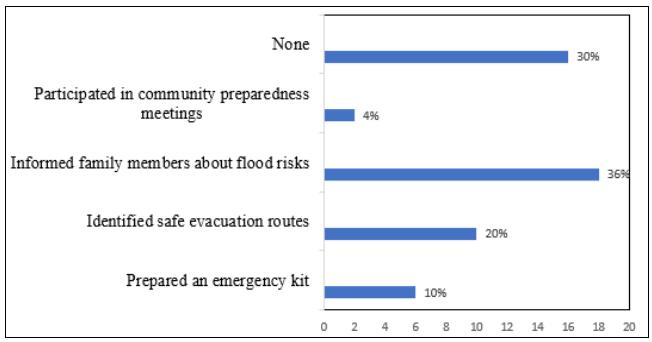
4.1.3 Objective Two: Preparedness Behaviours



Source: Primary Data

Fig. 3: ZNBC Influence on Preparedness Actions (Residents)

Preparedness behaviour was moderate. 76% of respondents took at least one preparedness action after watching ZNBC coverage.



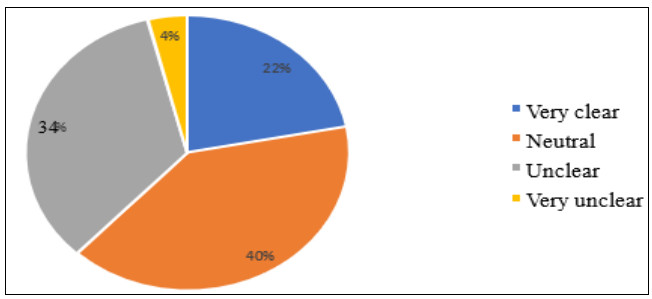
Source: Primary Data

Fig. 4: Types of Preparedness Actions Taken by Residents

The actions taken were mainly low-cost measures, such as clearing drainages, elevating household items, and observing water levels. Fewer than 20% undertook costly measures such as buying sandbags or relocating.

About 32% of residents did not take any preparedness action, citing lack of access to television, electricity issues, and the belief that floods were inevitable. Stakeholders from LCC, ZRCS, and DMMU agreed that ZNBC's content raises awareness but does not always translate into strong preparedness behaviour because instructions are not practical or community-specific.

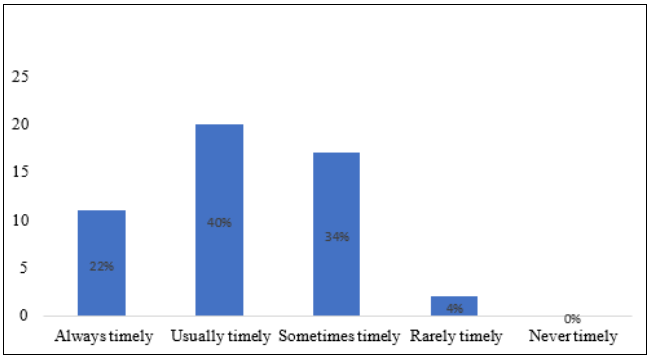
4.1.4 Objective Three: Clarity, Timeliness, and Relevance of ZNBC Messaging



Source: Primary Data

Fig. 5: Residents' Perceptions of Clarity of ZNBC Messages

Clarity of ZNBC broadcasts remained a significant concern. Only 22% found the messages very clear, mainly due to the use of technical terminology and limited use of local languages.



Source: Primary Data

Fig. 6: Residents' Perceptions of Timeliness of ZNBC Flood Messages

Timeliness of flood warnings was inconsistent. Many warnings were delivered during scheduled news hours instead of real-time broadcasts. Residents also reported missing updates due to electricity outages.

Table 2: Thematic Analysis of Open-Ended Responses on Improving ZNBC Coverage

Theme	Resident Responses (Examples)	Stakeholder Responses (Examples)
Use of local languages	"Messages should be in Nyanja or Bemba so everyone understands."	"Community languages improve comprehension, especially for older residents."
Partnerships with community leaders	"Engage our ward councillors and church leaders to explain the messages."	"Working with community leaders helps reinforce ZNBC campaigns with trusted local voices."
More timely updates	"We sometimes hear the news when floods have already started."	"Television alerts should be issued before heavy rains, not just during emergencies."
Community-based follow-up	"Not everyone has a Television; ZRCS should also do door-to-door sensitisation."	"Television should be supported by field presence so that messages are backed by action."
Multi-channel communication	"Radio is easier when power goes out. Social media works for young people."	"Television must be complemented by radio, SMS, and social media to reach all population segments."

Source: Primary Data

Relevance was also an issue. Residents explained that ZNBC focused on national coverage without addressing specific risks in Kanyama, such as local drainage systems, high-risk areas, and evacuation points. Stakeholders strongly supported the need for more localised communication tailored to high-risk communities.

4.2 Discussion of Results

The findings show that ZNBC plays an important role in communicating flood information in Kanyama. With 78% of residents exposed to ZNBC's coverage, awareness levels were high, and 68% reported improved understanding of flood risks. This confirms television's strong influence on public awareness in high-risk communities. However, comprehension was limited. Only 22% found ZNBC messages "very clear," mainly due to technical language, limited use of local languages, and reliance on complex meteorological terms. Stakeholders from ZNBC, ZMD and DMMU acknowledged that broadcast information often comes directly from technical reports without adequate simplification, reducing clarity.

Preparedness levels were moderate: 76% took at least one action after watching broadcasts, but most engaged only in low-cost measures, reflecting socioeconomic constraints. Fewer than 20% undertook more advanced preparedness activities, showing that awareness does not necessarily translate into strong action when resources are limited. Stakeholders from LCC, ZRCS and DMMU also noted that the lack of practical, step-by-step guidance limits residents' ability to implement effective preparedness strategies.

Timeliness and relevance of messages further affected preparedness. Many residents relied on scheduled news bulletins rather than real-time alerts, and rainy-season power outages led to missed updates. Stakeholders confirmed that delays sometimes stem from coordination challenges among institutions. Residents also felt that ZNBC messages were too general and did not address Kanyama-specific risks, highlighting the need for more localised and community-focused content.

Overall, while ZNBC raises awareness for most residents (78%), limited message clarity (22%), inconsistent timeliness, and insufficient relevance reduce the effectiveness of televised communication. Improved collaboration between ZNBC and disaster-management agencies could enhance clarity, localisation and timeliness, enabling residents to better understand and act on flood information.

5. Conclusion

The study shows that ZNBC has a strong reach in Kanyama and contributes significantly to raising awareness of flood risks. Most residents had been exposed to flood coverage and reported increased awareness. However, only a small proportion fully understood the messages due to technical terminology and limited use of local languages. Preparedness remained moderate and centred on simple, low-cost actions, reflecting both message limitations and socioeconomic barriers.

The clarity, timeliness and relevance of ZNBC messages strongly influenced how effectively residents responded. Delayed broadcasts, lack of localisation and insufficient practical guidance reduced opportunities for timely and meaningful preparedness. Stakeholders acknowledged that better coordination and simplified communication are needed.

In conclusion, while ZNBC plays an important role in disaster awareness, enhancing message clarity, localisation and practical content is essential for improving preparedness and resilience in Kanyama. Strengthening collaboration with key disaster-management institutions could greatly improve communication effectiveness.

6. Acknowledgment

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