

Influence of Community Radio Coverage on Audience Attitudes, Perceptions and Behaviour Related to Climate Change: Evidence from Radio Lake Victoria

Authors

Angela Juma ⁽¹⁾; Jane Maina ⁽²⁾; Jonai Wabwire ⁽³⁾

Main author's email: jumaangela10@gmail.com

(1,2,3) Kisii University, Kenya.

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Abstract

This study examines how community radio's climate change coverage influences audience attitudes, perceptions, and behaviours, using Radio Lake Victoria as a case study. Climate change poses a significant threat in Kenya, and reaching rural communities with accurate information remains a critical challenge. The study investigates whether broadcast content in community radio stations raises awareness, enhances understanding of climate risks, and encourages the adoption of adaptive behaviours. A descriptive survey design with a mixed-methods approach was employed, combining in-depth qualitative interviews and quantitative questionnaires. Probability sampling selected 396 households in Nyando Sub-County based on Yamane's (1967) formula, while a census approach included all 20 editorial staff members of the radio station. Quantitative data were coded and analysed using SPSS Version 25, while qualitative interview data were transcribed and organised into themes and subthemes aligned with the study objectives. Findings indicate that community radio significantly shapes how audiences perceive and interpret climate risks. Community radio enhances understanding of local climate impacts and motivates adaptive behaviours, including climate-smart agriculture, flood preparedness, and environmental conservation. The results support agenda-setting and framing theories, showing that frequent, well-structured broadcasts influence what audiences consider important and how they interpret climate information. The framing of climate issues through clarity, relevance, and presenter credibility strongly affects listeners' willingness to adopt adaptive behaviours. The study addresses a gap in understanding the role of community radio in shaping local responses to climate-related challenges in Kenya and contributes to the underexplored intersection of agenda-setting and framing in community-based climate communication.

Key terms: Attitudes, behaviour change, climate change communication, community radio, perceptions.

INTRODUCTION

Climate-related hazards such as recurrent flooding, erratic rainfall patterns, and rising lake levels have increasingly disrupted livelihoods and household stability in Kenya's Lake Victoria Basin, where rural communities depend heavily on rain-fed agriculture, fishing, and livestock rearing (Government of Kenya, 2018; IPCC, 2022). Despite the development of climate information services (CIS) intended to support adaptation, access and utilisation of such information among rural households remains constrained in practice. For example, a survey of smallholder farmers in Makueni County found that although 77.4 per cent of households reported access to some form of climate information, less than half of those households actually utilised the information in farm decision-making related to climate risks, indicating a significant gap between access and effective use (Muema et al., 2018). Furthermore, another study showed that reliance on conventional dissemination channels outside of community radio and interpersonal networks is low among rural farmers due to cost, literacy, and infrastructure barriers, meaning that formal sources of climate information often do not reach those most vulnerable to climate variability (Muema, 2017). These findings reflect a broader pattern in Kenya where rural populations experience uneven distribution of climate information, underscoring the need for communication approaches that translate technical climate science into messages that are both accessible and actionable for rural audiences (NEMA, 2016; IPCC, 2022).

It is within this context that community radio has thus emerged as one of the most powerful instruments in realising this objective. Because of factors such as greater reach, lower cost, and the use of local languages, community radio has managed to impart knowledge to people who may not have regular access to resources like television, the internet, or official news publications. Besides just providing basic updates, community radio stations have interactive segments like call-ins, live discussions, and expert interviews. These methods assist them in making the difficult topics understandable and relatable to the audience's daily lives. In the Lake Victoria Basin, Radio Lake Victoria has a lot of influence because it communicates in Luo and has a strong cultural attachment to the listeners. Through its programming,

the station plays a significant role in raising environmental awareness, guiding farming decisions, and enhancing household preparedness for climate-related risks, thereby providing a practical foundation for examining its contribution to climate change adaptation efforts.

However, despite recognition of radio's role in rural communication, there remains limited empirical evidence demonstrating how community radio influences audience attitudes, perceptions, and actual behavioural responses to climate change. Existing studies tend to focus on information dissemination and awareness creation, with less attention to how audiences interpret climate-related messages or which specific programme characteristics contribute to behavioural change (Ogunniyi et al., 2020; Leal Filho et al., 2021). Moreover, there is a notable lack of context-specific research focusing on Nyando Sub-County, despite its documented exposure to climate-related hazards within the Lake Victoria Basin (Government of Kenya, 2018). This gap in both geographical focus and audience-centred analysis points to the need for a more localised and theoretically grounded investigation.

In response to these gaps, this study examines the influence of climate change-related content broadcast by Radio Lake Victoria on listeners' awareness, emotional responses, risk perceptions, and adaptive behaviours. Although the research forms part of a broader project, it specifically concentrates on how radio coverage shapes community attitudes and actions toward climate change. By analysing both audience reception and internal radio production practices, the study positions community radio as a potentially powerful mechanism for supporting climate change adaptation among vulnerable populations, thereby providing a focused framework for evaluating its practical and policy implications.

This article discusses the nature, depth and framing of climate change on Radio Lake Victoria and examines how it shapes listeners' awareness, perceptions, emotional responses, and adaptive behaviours in Nyando Sub-County. The study analyses both audience reception and radio programming practices to establish the link between media messages and community-level responses to climate-related

challenges. It is expected that the findings will provide empirical evidence on the effectiveness of community radio as a climate communication tool, identify program features that enhance understanding and action, and contribute to scholarly discourse on media-driven climate adaptation in rural contexts. Ultimately, the study seeks to inform broadcasters, policymakers, and development practitioners on how community radio can be strategically leveraged to promote resilience and sustainable livelihoods among vulnerable populations.

LITERATURE REVIEW

Overview of Climate Communication and Public Understanding

While the global climate is warming and the number of natural disasters is increasing, the issue of climate change communication has become a crucial area of research. Studies indicate that despite the continuous progress of scientific knowledge of climate change, the public understanding, to a large extent, remains split, and the influence of the context on it is significant (IPCC, 2022). The difference between them can be traced partly to the fact that not enough scientific information is being communicated, and mostly it results from the people's way of receiving and understanding the climate messages. Often, climate information has to be converted into local languages, cultural views, and common experiences so that it can help people comprehend the problems and react to them in feasible ways (UNDP, 2021).

In the situation of illiteracy and low digital connectivity in a number of developing countries' rural areas, especially the rural African regions, reliance on traditional information sources has caused a continuous existence of communication gaps. In such a circumstance, the community radio is instrumental in disseminating information on climate change. Researchers are of the opinion that communication on climate change cannot be considered accomplished only after the provision of information; it should also enhance people's perception of risks, their reflection on them, and effective reaction (Wekesa, 2013; Entman, 1993).

Role of Community Radio in Rural Information Systems

Community radio is generally referred to as a potential instrument to facilitate social changes, particularly among the less privileged groups of the population. It serves as a bridge between the scientific world and the rural people; thus, the complicated information is made simple and relatable to local life. Examples from Ghana, as referred to by Al-Hassan et al. (2011), demonstrate that through providing information which is adjusted to local conditions and necessities, community radio is a tool for making better decisions.

In East Africa, the role of community radio stations is very much appreciated for the purpose of disseminating messages regarding the environment and climate change. They are a medium through which the public can become involved, ask questions, and discuss local issues without incurring high costs or facing other obstacles. The study conducted by Odera and Laituri (2014) revealed that in Kenya, the use of community radio led to the rural communities' climate adaptation capacity being enhanced by the integration of local knowledge and scientific information.

As is the case with many other community stations, Radio Lake Victoria, among others, broadcasts in vernacular languages like Luo. This manner of communication helps people to identify with the messages not only on a personal but also on a cultural level. Research has proven that the use of local languages facilitates people's comprehension, recall, and trust of the communicated ideas, the last aspect being very important when it comes to changing people's behaviour regarding climate change (BBC Media Action, 2022).

Media Exposure and Climate Awareness

A growing body of communication scholarship identifies media exposure as a critical determinant of climate awareness and literacy. McQuail (2010) argues that sustained engagement with issue-focused media content shapes how audiences perceive information, assign relevance to public issues, and internalise new knowledge. Empirical studies support this position by demonstrating that repeated exposure to educational media increases the likelihood that information will be translated into practice. For instance, Singh (2017) found that sustained listenership to community radio

programmes in India contributed to improved agricultural practices, including water conservation and crop diversification, illustrating how consistent media engagement can facilitate behavioural change.

Comparable findings have been documented within African contexts, where radio remains the most accessible and trusted medium, particularly among rural populations. Myers (2011) and Manyozo (2012) note that radio continues to outperform television, print media, and digital platforms in rural Africa due to its affordability, portability, and ability to communicate in local languages. In Kenya, Wekesa (2013) demonstrates that radio plays a central role in communicating climate and environmental information, especially in areas prone to climate-related hazards such as droughts, floods, and erratic rainfall. Similarly, Masinde and Bagula (2011) observe that radio-based climate communication enhances environmental awareness by providing timely information and fostering dialogue on local climate risks and response strategies.

More recent Kenyan studies further show that exposure to climate-related radio programming improves farmers' understanding of climate variability and supports adaptive decision-making. Mwaniki et al. (2017) report that smallholder farmers who regularly listened to agricultural and climate programmes were more likely to adopt climate-smart practices compared to non-listeners. Likewise, Ndavula and Lungahi (2022) find that vernacular radio stations in semi-arid and flood-prone regions of Kenya play a significant role in translating scientific climate information into culturally meaningful messages, thereby strengthening community preparedness and early warning awareness. Collectively, these studies suggest that continuous exposure to locally framed radio content not only enhances climate awareness but also equips rural audiences with the knowledge and interpretive capacity required to recognise climate risks and adopt appropriate preventive and adaptive measures.

Theoretical Perspectives Informing Climate Communication Framing Theory

Framing theory provides a lens for understanding risk perception and interpretation. The manner in which climate issues are framed through locally relevant

examples, the use of indigenous language, integration of local knowledge, and the involvement of trusted presenters influences how listeners perceive climate risks and assess their personal vulnerability. When climate impacts are framed in relation to familiar livelihood activities such as farming and fishing, audiences are more likely to perceive climate risks as directly affecting their daily lives. This aligns with evidence showing that behavioural change is more likely when individuals recognise personal risk and clearly understand available response options (IPCC, 2022; UNDP, 2021).

Communicating the local impact of climate change, such as flooding in Nyando, failure of crops, and incidence of diseases that are caused by vectors, increases the level of perceived personal risk, and as a result, the affected population engage in the behaviour of adaptation. This confirms the findings of Wekesa (2013), who revealed that climate change is a popular topic that can be featured on local radios, provided the message is relevant to the listeners from the area.

Agenda Setting Theory

Agenda-setting theory informs the attitudinal dimension of the study by explaining how the frequency and prominence of climate-related programming on Radio Lake Victoria elevate climate change as a salient issue within the community. Regular broadcasts on flooding, rainfall variability, and agricultural adaptation increase the perceived importance of climate issues, thereby shaping listeners' attitudes toward climate change as an immediate and relevant concern rather than a distant or abstract problem. This heightened salience contributes to more attentive and receptive attitudes toward climate information, which is a necessary precursor to behavioural change.

Agenda-setting theory maintains that media have the power to influence the audience's thoughts by deciding which topics should be given more prominence (McCombs & Shaw, 1972). The consistency of climate change coverage in radio programs will make the audience perceive it as the most important issue that needs solving. Nevertheless, according to the observations made by Wekesa (2013), the Kenyan media only provide coverage for climate change when

there is an extreme event; hence, its importance is lowered between the occurrences of the crises.

There is a need to take advantage of community radio to re-engage with the issues, giving them continuous coverage and thus maintaining the importance of the topics throughout the year.

Behavioural Change and Climate Adaptation

The main objective of behavioural change through climate communication is to inform more people about the climate issue, which is not easy; however, it has to go beyond that. It needs motivation, social norms, emotional involvement, and also some kind of a practical guide. The results indicate that the change in behaviour is most probable if the audience members see the risk for themselves and at the same time receive their next steps clearly outlined by somebody (IPCC, 2022; UNDP, 2021).

Locally focused interventions, such as agriculture or safety steps, by following instructions, mixing in local knowledge, and frequently reminding each other of what has been learned, are just some of the ways community radio plays a role in changing the behaviour.

The combined influence of agenda-setting and framing also informs the behavioural outcomes examined in the study. Community radio programmes that not only highlight climate risks but also frame adaptation practices as practical, achievable, and socially endorsed contribute to the translation of awareness into action. In the Kenyan context, community radio has been shown to support the adoption of agricultural adaptation strategies such as early planting, crop diversification, water conservation, and the use of seasonal forecasts by repeatedly linking climate information to actionable guidance and local experience (Hassan et al., 2011; Odera & Laituri, 2014). The patterns of behaviour observed among RadioLake Victoria listeners, particularly increased preparedness and engagement in climate-smart practices, reflect this interaction between issue salience, risk interpretation, and clearly framed adaptive options.

Gaps in Existing Research

Although current studies widely acknowledge the role of media in climate change communication, critical

gaps persist in both focus and analytical depth. Much of the literature privileges national and digital media platforms, often at the expense of community radio, despite evidence that radio remains the most trusted and accessible medium in rural Kenya. Methodologically, previous research also shows notable limitations. Quantitative surveys dominate the field, often capturing exposure levels without interrogating how programme design, journalist capacity, or institutional constraints influence message quality and credibility. Where qualitative approaches are employed, they frequently overlook production-side dynamics, such as training in climate reporting, programme consistency, and resource availability, all of which are central to participatory communication and development media theory. Furthermore, while several studies examine climate communication in Kenya broadly, few are geographically specific, resulting in generalised conclusions that fail to reflect the lived realities of highly vulnerable regions. This is particularly evident in the Lake Victoria Basin, where empirical, location-specific studies remain scarce despite the area's heightened exposure to floods, erratic rainfall, and livelihood disruptions. Collectively, these gaps point to the need for an integrated, context-sensitive approach that links media structures, audience interpretation, and behavioural response.

METHODOLOGY

The study utilised a descriptive survey design to examine audience awareness, attitudes, risk perceptions, and adaptive behaviours related to climate change. This design was appropriate for collecting data from a large population at a single point in time and for identifying patterns and variations in climate information exposure and responses. To enhance validity, a mixed-methods approach integrating quantitative and qualitative techniques was employed, enabling triangulation between audience outcomes and media production perspectives.

The target population comprised households in Nyando Sub-County. A multi-stage sampling procedure was used, with locations and villages selected through simple random sampling to ensure representativeness. After establishing the sampling frame, Yamane's formula was applied, yielding a minimum sample size of 392 households from a population of 20,139 at a 95%

confidence level and 0.05 precision. To account for non-response, the sample size was increased to 396 households, which was considered adequate for reducing sampling error in heterogeneous populations (Gill et al., 2010).

Quantitative data were gathered using structured questionnaires administered through door-to-door visits by trained research assistants familiar with the local context. Researcher-assisted questionnaires were used where necessary to support respondents with low literacy levels. Qualitative data were collected through face-to-face interviews with 20 editorial staff members of Radio Lake Victoria, selected via a census. Quantitative data were analysed utilising descriptive statistics, and qualitative data were analysed using thematic analysis. Ethical procedures included obtaining informed consent,

ensuring confidentiality, and guaranteeing voluntary participation.

RESULTS AND DISCUSSION

RESULTS

Table 1 shows the major results of the research in brief. As a whole, the interviewees expressed that Radio Lake Victoria had been their most exposed source to climate-related content, and consequently, the radio station had enhanced their climate awareness, increased their risk perception, and they had adopted adaptive behaviours. One of the key reasons for the success of the program was the use of local languages and the interviewer format, although the impacts of late broadcasts and poorly filled journalists' trainings were mitigated by these.

Table 1: Summary of Key Findings on the Influence of Radio Lake Victoria's Climate Coverage

Theme	Key Result
Exposure to Content	The majority of listeners accessed climate programmes frequently, especially in weekly and evening segments.
Awareness & Understanding	Respondents showed increased knowledge of local climate effects (flooding, crop failure, rainfall variability, disease prevalence).
Risk Perception	Regular listeners reported stronger feelings of vulnerability and concern for future climate hazards.
Behaviour Change	Radio messages motivated the adoption of drought-resistant crops, improved flood preparedness, soil conservation, tree-planting, and early planting guided by local forecasts.
Factors Enhancing Influence	Use of Luo language, call-ins, expert interviews, relatable examples, and repeated key messages.
Limitations	Irregular climate segments, limited journalist capacity in climate reporting, financial constraints, and competition from entertainment content.

DISCUSSION

The research findings show that community radio has been a major factor in changing climate-related perceptions and behaviours among rural audiences. Those who were greatly exposed to climate programmes demonstrated higher levels of awareness and better understanding of how climate change affects their localities, indicating the effectiveness of communication that was simplified and locally contextualised. Survey results indicate that Radio Lake Victoria constituted the primary source of climate change information for a substantial proportion of

respondents. Exposure was assessed by asking respondents how frequently they listened to climate-related programmes (daily, weekly, occasionally, or rarely). The majority of respondents reported frequent exposure, particularly through weekly and evening programmes (approximately 81.6% of respondents). This result aligns with earlier studies demonstrating that radio remains the most accessible and trusted medium for rural populations in Kenya and sub-Saharan Africa (Myers, 2011; Manyozo, 2012; Wekesa, 2013).

Climate awareness was measured using a set of knowledge-based indicators, including respondents' ability to identify local climate impacts such as flooding, rainfall variability, crop failure, and climate-related disease prevalence. Results show that respondents with higher exposure to Radio Lake Victoria's climate programmes demonstrated significantly higher awareness scores compared to those with lower exposure. This finding supports McQuail's (2010) assertion that sustained engagement with issue-focused media enhances cognitive awareness and reinforces the salience of public issues.

From the perspective of framing theory, these outcomes can be analytically interpreted as a result of how radio content structured and highlighted specific aspects of climate change for the audience. Framing theory states that the manner in which information is presented through selection, emphasis, and contextualisation shapes audience interpretation and the perceived importance of an issue (Entman, 1993; Chong & Druckman, 2007). In this case, Radio Lake Victoria's use of the Luo language, relatable storytelling, and interactive segments functioned as frames that personalised climate risks. This framed listeners to perceive climate change as an immediate and tangible threat rather than an abstract or distant problem, thereby shaping risk perception.

Moreover, the participatory nature of the programming amplified the framing effect by allowing audiences to internalise and negotiate meaning, consistent with the theory's emphasis on interpretive engagement. Cultural factors equally played a central role in enhancing the effectiveness of Radio Lake Victoria's climate communication. The use of the Luo language, familiar metaphors, and interactive formats such as call-ins and listener testimonials increased trust and identification with the messages. These findings align with African climate communication scholarship that emphasises the importance of culturally embedded and participatory communication strategies (Manyozo, 2012; Oino & Musau, 2024).

Behavioural change was measured by asking respondents whether they had adopted specific climate adaptation practices after listening to radio programmes. These practices included early planting, use of drought-resistant crop varieties, soil

conservation measures, flood preparedness actions, and tree planting. The findings show that a substantial proportion of respondents (81%) reported adopting at least one adaptive practice, with early planting, flood preparedness, and soil conservation emerging as the most commonly cited behaviours.

These results reinforce earlier evidence that radio-based climate communication can move audiences beyond awareness to action when messages provide clear and practical guidance (Hassan et al., 2011; Odera & Laituri, 2014). Behavioural change was most evident where radio messages combined risk information with actionable steps and were reinforced through repeated broadcasts. This supports findings by UNDP (2021) and IPCC (2022), which indicate that behavioural adaptation is more likely when individuals both recognise personal risk and receive clearly articulated response options.

However, structural barriers constrained the depth and consistency of impact. Irregular scheduling of climate programmes, limited specialised training in climate reporting among journalists, and financial constraints reduced message continuity. These challenges mirror those identified in previous Kenyan studies, which note that institutional capacity and resource limitations often weaken sustained climate communication efforts (Wekesa, 2013; Ogunniyi et al., 2020). Such constraints help explain why behaviour change was uneven across the audience and why some respondents reported increased awareness without corresponding action.

Analytically, these limitations can be understood as structural factors that weaken the continuity and consistency of framing, thereby reducing the potential for long-term influence on audience perception and behaviour. This underscores that while framing is a powerful tool for shaping understanding and action, its effectiveness is inherently linked to the institutional capacity and resources available to the communicator.

Limitations

The effect of Radio Lake Victoria's climate coverage was hampered by various limitations. Among these were the scheduling of climate segments, which were not always consistent, the capacity and training of journalists who specialised in climate reporting, and

financial resources that were not always sufficient for a continuous production of high-quality content. In addition, the radio programmes that are mainly entertainment-focused have been attracting the audience that would have otherwise been interested in climate issues, and this has led to a decrease in the number of people who are aware of climate-related matters.

CONCLUSION AND RECOMMENDATIONS

Conclusion: Radio Lake Victoria has a major influence on how listeners shape their attitudes, views, and behaviour changes in response to climate change. By focusing on climate issues, their programs deepen people's knowledge, increase their awareness of the dangers, and motivate them to make practical responses such as using sustainable agriculture and getting ready for disasters. The research establishes that community radio is still a very important vehicle for imparting climate knowledge in the rural parts of Kenya. However, the potential of this medium is limited due to irregular programmes, a lack of sufficient resources, and the low technical skills of the presenters. Therefore, it will be more effective if these constraints are addressed.

Recommendations: The research suggests that Radio Lake Victoria should increase the amount and change the times of its climate-related programmes so that the listeners would be consistently reminded and updated with what they have learned. Delivering broadcasts on a regular basis and at a fixed time would make sure that the audiences always have access to the latest and most up to date information about the

climate risks and the ways to adjust to them. Besides that, journalists should undergo training in climate science communication so that the information provided can be of the highest quality, most understandable, and as detailed as possible. Specialists trained in the field will be more capable of analysing scientific data and converting it into understandable language for the community.

Moreover, the study result shapes the opinion that climate content should be localised through the use of community success stories, practical demonstrations, and indigenous knowledge. Such a method would make the information more relatable and culturally relevant; thus, it would have a far greater impact. Besides, the level of participation in the community can be increased by calls, in-person sessions, listening groups, and structured feedback mechanisms. These forums will help the radio station in the content preparation process by giving access to the needs of the audience, and at the same time, they will encourage further engagement.

Furthermore, the establishment and maintenance of such quality climate programming depend on NGOs, the government at the county level, and climate-focused agencies. These cooperations can facilitate the station's project by providing expert advice, money, and accurate information. In the end, it is highly recommended that the station should put together and install early warning broadcast systems to make sure that climate warnings are sent out in good time, thus helping villages in preparing for coming disasters and lowering the risk of harm.

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