

Research Article

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Salience of community radio on climate change risks in rural Kenya: A case of Migori County

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Abstract: Many people globally have been affected by climate change. Currently, over 150,000 deaths occur worldwide every year due to global warming. In Kenya, climate change has had devastating effects. Communities in rural areas are often most affected by climate change impacts because they rely on climate-sensitive industries to earn a living. To address this, the study examined the utilization of community radio as a key media platform with a wide audience in rural Kenya to promote climate change awareness. This study assessed community radio's role in the dissemination of information and in public engagement on matters of climate change in rural Kenya specifically Migori County. The study used a mixed approach of both qualitative and quantitative to collect data. 401 questionnaires were administered to residents who listen to at least one of the five main Dholuo community radio stations in Migori County, Kenya. This population was calculated using Yamane's formula from a total population of 811, 051 residents of Rongo, Awendo, Uriri, Suna East, Suna West, and Nyatike sub-counties. The five major community radios in Migori under study included: *Milambo, Anyuola, Tarumbeta, Onagi, and Rameny*. 20 key informants drawn from the community radio stations and climate change experts were interviewed for qualitative data. The study revealed that community radios do not give prominence to serious issues of climate change apart from the effects that come as news stories. It is recommended therefore that relevant stakeholders should prioritize proper utilization of community radios on matters of climate change.

Keywords – Adaptation, Climate change, Community Radio, Mitigation

1. INTRODUCTION

The United Nations posits that the impacts of climate change affect development negatively. It also affects efforts aimed at alleviating poverty and human suffering. Policymakers across the globe aver that climate change is now affecting every region of the world that is inhabited. They argue that even though there are other factors that affect climate, human influence, which is anthropogenic climate change, remains among the major contributors to a number of observable changes in weather and climate extremes (IPCC, 2021). United Nations also assert that human activities especially in the era of industrialization, have led to emissions of greenhouse gases that have resulted in high temperatures. This has eventually led to melting glaciers, heavy precipitation, higher temperatures leading to heat waves, changing rain and snow patterns, intense droughts, warmer oceans, rising sea levels, increased ocean acidity, shrinking sea ice, less snowpack, and thawing permafrost (ibid).

This, therefore, implies that to mitigate climate change risks, concerted efforts are invaluable. Uncertainties associated with climate change pose significant risks to global economic development. People in rural areas rely on climate-sensitive industries such as agriculture, fishing, and forestry for a living. At the grassroots level, De Souza, et al. (2015) argue, knowledge on how to adapt to climate change and mitigate its effects is extremely fragmented and dispersed. The majority of those who are likely to be affected by climate change risks have the least access to information about current and projected climate change impacts, as well as resources for responding to these impacts. Therefore there is an urgent need to communicate climate change issues in locally relevant and culturally appropriate contexts (Agrawal & Perrin, 2009).

Community radio is a significant media platform that aids in sharing climate change knowledge with the local people. However, climate change knowledge mobilization remains a challenge at the local level due to uncertainty about appropriate approaches to framing messages, engaging decision-makers, and encouraging community buy-in (Sussman, Gifford & Abrahamse, 2016). Kenya is already experiencing climate change impacts in the rural areas. It has negatively impacted the lives in rural Kenya especially those in the agriculture sectors-leading to famine and increased poverty (Kalele, Ogara, Oludhe & Onono, 2021). Information dissemination on climate knowledge can widely and effectively be achieved through community radio. As Ogenga (2020) and Anyuor and Achieng' (2022) puts it, for community radios to perform better, members of the public must be involved in discussing issues that affect them using local language that they understand well. This argument is critical in handling matters of climate change that affect rural Kenya. During such engagements, apart from media informing and educating them on relevant policies and what ought to be done to mitigate climate change risks, their ideas will also be sought, and implementations of such realized.

This will actually be part of the media functions aimed at benefitting the people-sharing information and consequently making individuals feel that they are talking to each other; sharing ideas and finding lasting solutions to the problems affecting them (Emojong', 2022). Media Council of Kenya-the State of Kenya's Media in 2022, 74 percent of Kenyans listen to radio. On the other hand, the Kenya Population Census (2019) indicates that the country's population that lives in rural areas is 63 percent compared to 37 percent in urban. Since community radio uses local language, is accessible, effective, and timely, it becomes the right tool for climate change information dissemination in the rural context. It is in this understanding that this study investigated the role community radio plays in mitigating climate change risks in rural Kenya, taking the case of Migori County, which is one of the rural counties in Kenya.

2. LITERATURE REVIEW

2.1. Impacts of Climate Change

There have been long-term shifts in temperature and weather patterns attributed to nature. However, from around the 1800s, human activities became the main actors in climate change. This is argued to have been a result of burning fossil fuels leading to an increase in greenhouse gas levels (Laughlin, 2023). Laughlin (2023) further argues that the year 2021 was marked as one of the hottest years in the world. Due to this, there were so many heat-related illnesses, and wildfires were starting and spreading easily and very fast. But it is also important to understand that intense drought, water scarcity, flooding, rising sea levels, declining biodiversity, and catastrophic storms are indeed consequences of climate change (Laughlin, 2023). However, this situation is expected to worsen in the future. Heshmati (2021) explains that the global mean temperature is likely to rise up to 5.4 degrees Celsius by 2100. Apart from humans and temperature rise, climate change has also exposed animals to great stress that even influences metabolic and endocrine function. This kind of impact has led to the movement of people and animals from place to place in such a better environment.

In China, climate change threatens its dense population that is already experiencing dangerous occurrences such as coastal flooding, surging storm, and erosion. It is argued that climate change is likely to affect China's economy adversely. In 2022, World Bank placed China at 27 percent of global Carbon Dioxide emissions. This,

World Bank argues, will require a huge shift of resources, innovation, and new technologies in order to enhance efficiency and resource productivity. In Africa, climate change has been identified as the leading crisis in the environment and human lives. This has and still affects millions of people on the continent. The water problem in Africa as a result of climate change is expected to affect over 250 million people and displace more than 700 million by 2030, according to the World Meteorological Organization (WMO, 2022). Odimegwu (2022) gives a report by the United Nations about the gas emissions from Western countries that such activities are likely to hit the African continent the most-risking the lives of estimated seven million human beings. Temperature rise, heat waves, prolonged droughts, tropical cyclones, extensive flooding, and sea level rise, all of which result in fatalities, displacement of people, and property damage, jeopardize Africa's ability to meet the United Nations Sustainable Development Goals and Africa's Agenda 2063 (WMO, 2022).

In Kenya, climate change has had many effects-most common ones being floods and droughts. According to the World Bank (2021), approximately more than 70 percent of natural disasters in Kenya are due to climate change. Incessant drought and flood patterns in Kenya have had huge social and economic impacts. In fact, Kenya is said to be vulnerable to long-term climate change, which can result in cumulative impacts on economic, social, and environmental aspects of life. This is expected to affect the country's general development and infrastructure. "Heavy rains that lead to huge flooding and soil erosion, droughts and rise in sea level, altered water resources, and environmental degradation are some of the factors viewed as obstacles to Kenya's development" (World Bank, 2021). The health and sanitation sector in Kenya has also been adversely affected by climate change even though such information has not been adequately disseminated to the public.

The Ministry of Health argues that rising temperatures in Kenya are likely to result in more frequent heatwaves which will further lead to heat-related mortality. Therefore, it is invaluable for studies such as this to be conducted so that community radios can be used in information dissemination on matters of climate change and its mitigation.

2.2. Community radio and climate information dissemination

Community radio is becoming more popular in Africa, particularly in Kenya. The United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2021) promotes independent and community-run media platforms. Community radios, according to UNESCO, play an essential role in ensuring media pluralism and freedom of expression and are an indicator of a healthy democratic society. Community radio, as an alternative medium to public, commercial, and social media, is distinguished by its accountability to, and participation in, the communities it serves. They are primarily concerned with local issues and provide public forums for debate and discussion (UNESCO, 2021).

Community radio is run by and for communities in local languages. The use of local languages by community radios allows the reach of a wider audience, including illiterate rural communities, in languages they understand. Programming often focuses on issues central to local development and their lives, such as climate change, health, education, agriculture, nutrition, and community governance. Information on climate change risks and impacts can be disseminated through interactive talk shows, documentaries, drama, and music, helping communities to learn more about these impacts and share their experiences of responding to them. Climate change risks and impacts information can be disseminated through music, documentaries, interactive talk shows, and drama, allowing communities to learn more about these effects and share their responses. Most community radio initiatives in developing countries currently focus on providing listeners with information and messages about short and medium-term weather forecasts for farmers, alerts for extreme weather events, and messaging to discourage environmentally degrading behavior (UNFCCC, 2022).

As important as these messages are for communicating local climate change adaptation, community radio has the potential to strengthen community voices by providing an accessible space for community knowledge sharing. Communities that participate in this way gain a sense of empowerment, which can aid in the development of local,

institutional, and organizational capacity (UNFCCC, 2022). Rural communities can now develop messages in languages they understand through community radio broadcasting. Community radio promotes debate on issues, provides access to government policies, and assists community members in making decisions, organizing themselves, and evolving to manage their own affairs. The channel and language through which communication is done are essential factors that make climate change information useable. These local radio stations that broadcast in indigenous languages demonstrate sensitivity to the needs of rural audiences and have a higher acceptance by community audiences (Gathigi, 2009). Community radio is a knowledge tool.

Using it as a medium platform for climate change information and rural public engagement enables community audiences to speak using local languages; using terms and phrases that are easily understood; communication and exchange of knowledge between the audience are done in a consumable, and non-threatening way; providing two-way interactive social learning through call-in shows, listening clubs, and other forms of exchange; bringing together various stakeholders of the communities such as livelihoods, organizations, community leaders, and governance; provides a media platform to communities that have little or no access to other methods of conveying information and knowledge and communicates local knowledge, needs, and demands beyond the community to inform policy, research, and other communities (UNFCCC, 2022).

Such a station is found in India's Nagapattin village after the area was badly affected by the 2004 Tsunami. Smith (2022) remarks that the radio station, *Kalanjiam Samuga Vanoli*, was established by Development Humane Action (DHAN) Foundation to help mitigate the effects of climate change. The programmes here were focused on disaster preparedness and recovery; offering tricks and even important tips on how to fight climate change. They have introduced specialized mobile applications and WhatsApp groups through which people can send audio recordings with their queries about the effects of the cyclone on the land, how they can restore fertility, and crops to be grown as the changing monsoon schedules (Smith, 2022). Community radio should strengthen the voices of people and offer them the potential to do more on issues of knowledge sharing between communities in regard to climate change.

Bravos do Zambeze, for example, is a community radio station in Mozambique that "combines a high-quality 26-episode radio drama with training for community radio journalists, communicates information about disaster risk reduction and floods, and builds local capacity for disaster and climate change reporting," (UN Climate Change Nairobi Work Programme, n.d). Kenya has to some extent, utilized community radios to mitigate climate change risks. Many scholars argue that before community radio stations were widespread in Kenya, the majority of Kenyans entirely depended on the national radio station-the *Kenya Broadcasting Corporation*-for information about climate change. However, this station was only giving daily reports on weather forecasts (Mercy Corps, 2019).

Later, a number of community radio stations were established, which have been airing a lot of good information on climate change. For example, in Wajir, a community radio, the *Wajir Community Radio*, was founded in an effort to check on the effects of climate change. This radio is serving the region as a communications resource hub that informs the people in the community mostly the herders, about matters of climate change (Mercy Corps, 2019).

3. PROBLEM STATEMENT

Kenya is vulnerable to climate change impacts. Most sectors of the country that make up the economy are adversely affected. People living in rural Kenya mostly depend on sectors that are adversely affected by climate change. This poses a challenge to locals in rural communities since the majority are not aware of climate change mitigation and adaptation measures that they can put in place to avert the negative impacts of climate change. The use of community radio to disseminate climate change knowledge to local audiences will significantly aid local communities in putting in place mitigation and adaptation strategies against climate change. Therefore, community radios should powerfully translate the impacts of climate change in an understandable, localized, and conceivable way. It is in this understanding that this study will investigate the role community radios play in matters of climate change in Kenya, specifically in Migori County.

4. RESEARCH METHODOLOGY

The study sought to investigate the salience of community radio in mitigating climate change risks in rural Kenya, Migori County. According to the Kenya Population and Housing Census conducted in 2019, Migori County has been categorized as one of the rural counties in Kenya. A mixed research method was used to collect and analyze data whereas quantitative and qualitative approaches were used. For the quantitative approach, a total of 401 questionnaires were administered to residents of six sub counties, namely: Rongo, Awendo, Uriri, Suna East, Suna West, and Nyatike, which are dominated by Luo community that listens to at least one of the five main community Dholuo radio stations in Migori. According to the Kenya National Bureau of Statistics (2019), Migori has eight sub-counties; six are dominated by pure Luo and the Luo Suba ethnic communities who majorly speak and understand Dholuo while the other two; Kuria East and Kuria West, are dominated by Kuria community. The study investigated five Dholuo radio stations, namely; Milambo, Onagi, Anyuola, Tarumbeta, and Rameny, all are community stations located within Migori County.

Table 1: Target Population

No.	Target group	Target population
1.	Rongo	124,587
2.	Awendo	117,290
3.	Uriri	141,448
4.	Suna East	122,674
5.	Suna West	128,890
6.	Nyatike	176,162
	Total	811,051

Source: Researcher’s Findings

4.1. Sampling procedure

The study used the Taro Yamane method: $n = \frac{N}{1 + N(e)^2}$ Where: n signifies the sample size N signifies the population under study e signifies the margin error (it could be 0.10, 0.05, or 0.01).

$n = \frac{811,051}{1 + (811,051 * 0.05^2)} = 401$. This will give a sample size for each sub-county in the study as follow: Rongo- 61 Awendo-58 Uriri- 70 Suna East- 61 Suna West- 64 and Nyatike-87sub-county

For the qualitative approach, 20 key informants were drawn from the community radio stations and climate change experts who were then interviewed. Simple random sampling was used to reach the residents in the six sub-counties while the purposive sampling method was used to select the 20 key informants. Quantitative data was analyzed using descriptive and inferential statistics while qualitative data from key informants was analyzed using content analysis.

5. DATA ANALYSIS AND DISCUSSIONS

The results show that out of 401 questionnaires that were administered, 389 were returned for quantitative data. This gives a 97 percent return rate which is acceptable for research. For the qualitative data, out of the 20 key informants, 17 responded recording an 85 percent response rate. In the questionnaires, respondents were asked about the kind of climate change news information and educational items and programmes offered by the five community radio stations in Migori County. The tables of findings are as drawn below:

Table 2: Information dissemination as news items on matters of climate change

Sub County	Frequency	Percentage
Nyatike	70	88.3
Rongo	49	80.3
Awendo	42	75
Uriri	40	58.8

Suna East	39	68.4
Suna West	43	68.8
TOTAL	283	73%

Source: Researcher's Findings

Table 3: Educational items and programmes on matters of climate change

Sub County	Frequency	Percentage
Nyatike	14	17
Rongo	19	31
Awendo	15	27
Uriri	15	22
Suna East	19	34
Suna West	17	27
TOTAL	99	25%

Source: Researcher's Findings

The above results from quantitative data reveal that community radio contents on climate change are majorly one-touch news stories (73%) that inform about what has happened; stories about floods, drought, and deaths as a result of calamity but not much on initiatives or programmes that inform and educate (25%) audience on critical climate change issues.

This is similar to what qualitative data provides. Out of 17 respondents, 11 (65%) agree that most of the information they get from the five community radio stations about climate change are news stories that inform on what has happened as a result of climate change, but not educative stories and or programmes (35%) that can lead to audience's actions towards understanding climate change and combating it. According to one of the key informants, *Participant A*, community radio contents about climate change are very shallow. The stories do not educate their audience on what climate change is, its causes, and what can be done to mitigate its effects; *"the farthest they can reach is telling people to plant trees for rains to come and it is over."*

Another key informant, who is a radio news reporter avers that even though he has been attending some trainings on climate change, though rarely, he has never taken his time to do a comprehensive story that educates listeners about climate change and its effects. *"I don't think I have done many climate change stories. What I have done are just news stories about calamities as a result of climate change such as floods and droughts, but again I never mention climate change as the cause. If it is flooded, I report it just as such, as a result of heavy downpours. Yes, just that."*

This kind of reporting is argued to be shallow and may affect efforts to combat climate change across the globe. Community radios should come up with better strategies to ensure programmes and initiatives are in place where communities, villages, and towns are fully involved in the fight against climate change. According to United Nations Climate Change Nairobi (n.d), most initiatives that link community radios and climate change in developing countries still focus majorly on one-touch news stories-they are short-term.

But for this to be achieved, Smith et al. (2022) argue that there should be concerted efforts where some organizations and government agencies are involved to fund, come up with policies, and execute. This is what some of the key informants suggested. *Participant D*, who is an environmentalist, argues that extensive use of community radio to tackle matters of climate change has not been taken seriously; arguing that for this to occur, there should be a partnership between community radios and other stakeholders.

This worked well in India where a radio station, the *Kalanjiam Samuga Vanoli*, was established by Development Humane Action Foundation in the village of Nagapattinam to help combat climate change after the 2004 Tsunami attack. The radio has programmes that focus on disaster preparedness and recovery in the area. *"They have introduced specialized mobile applications and WhatsApp groups through which people can send audio recordings with their queries about the effects of the cyclone on the land, how they can restore fertility, crops to be grown as the changing monsoon schedules"* (Smith, 2022).

Once these stakeholders join hands to come up with programmes, community radios will indeed save many lives in regard to climate change. *Participant E*, an editor, argues that journalists and editors working in these community radios should be well trained on matters of climate change so that they understand how issues can be shared, not only to a few individuals but to a larger audience such as villages and towns around. *Radio stations are money-minded and will only do comprehensive stories on a particular area if there is a partnership and airtime is paid. Our journalists also need to be trained well on matters of climate change so that they know how to share and package the information about climate change. Stories and programmes can change people's mindsets.*

Such initiatives have worked in countries such as Ghana, where, according to the United Nations Climate Change Nairobi Work Programme, some community radios help in sharing experiences of climate change adaptations with other communities, villages and towns, and local leaders.

6. RESEARCH IMPLICATIONS

Kenya has been experiencing ravaging effects of climate change in the recent past and as such urgent mitigation and adaptation measures need to combat these effects. Among the measures that can be put in place is the utilization of community radios as a communication platform to educate the public and disseminate information on climate change. The use of Community radios is viable as climate change information is communicated in a local context using local languages. To advance climate change information, community radios should ensure there are programmes and news items that go beyond 'one-touch' stories, but discuss in-depth information on climate change. Ideal programmes would entail programmes that allow the audience to call in and share their views on climate change and also host experts on climate change.

The programmes and news items should also delve further and explain to the audience in-depth information on what is climate change, its causes, impacts, and mitigation and adaptation strategies of climate change in a local context. Community radios should also involve members of the community such as local leaders, religious leaders, and prominent persons in developing climate change programmes and spearheading their implementations. It is also imperative to intensively engage stakeholders such as the Government, Non-profit organizations, community groups and the media to partner with community radio stations to facilitate and fund climate change programmes on community radios. Stakeholders play a significant role in mitigation and adaptation processes and policy formulation. Such funding should also cater for the training of community radio journalists of on matters climate change. These will enable the journalist to have in-depth knowledge and also package and tailor climate change stories and programmes effectively.

Institutions of higher learning offering media courses should include 'climate change reporting' in their curriculum so that graduate journalists have in-depth knowledge of climate change and how to tailor and report climate change news to local audiences. There should be regular refresher courses and workshops on climate change for journalists and editors in the media industry.

7. CONCLUSION

Community radio is an important communication platform for knowledge dissemination particularly in rural areas where it can create opportunities for a geographically spread-out audience to engage in local debates. Community radio is a participatory communication platform that allows for dialogue and sharing of climate change knowledge among locals in a community. Community radio is also a rich platform as it facilitates discussion in the local languages of the specific community(ies).

As a communication platform, Community radio is well recognized as a powerful vehicle for advocacy and social change in Kenya, but its use in the field of climate change has remained very limited, and therefore a concern for this study. The study, therefore, recommends various strategies to ensure the optimum utilization of community radio for climate change awareness.

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