



Analysis of Indigenous Communication Approaches for Climate Change Mitigation and Adaptation among Rural Farmers in FCT-Abuja, Nigeria

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Abstract

The inability of state and non-state actors to effectively communicate climate change using indigenous communication approaches continues to be a barrier to achieving mitigation and adaptation practices among rural farmers. In a study population of 3,748 rural farmers, the study was conducted to provide an understanding of the role of Indigenous communication approaches for climate change mitigation and adaptation among rural farmers using the Kawu, Igu, Zuma, Dota, Kaida, and Dobi communities of Bwari and Gwagwalada Area Councils of FCT-Abuja as case studies. Using Indigenous Knowledge Systems and Participatory Communication theories, primary and secondary sources of data gathering, and analysis methods through Focused Group Discussions and questionnaires, the study found that Indigenous communication approaches play a crucial role in climate change mitigation and adaption among rural farmers. It established that rural farmers in FCT trust and act on information obtained through Indigenous communication approaches more than that of conventional media. The study concluded that rural farmers in FCT-Abuja rely on Indigenous communication approaches to access and share information about climate change mitigation and adaptation practices. The study recommended that state and non-state actors should deploy Indigenous communication approaches for climate change communication targeting mitigation and adaptation practices among rural farmers. Also, climate change communication by the state and non-state actors targeting mitigation and adaptation among rural farmers should be designed in line with Indigenous practices.

Keywords: Indigenous Communication, Climate Change, Adaptation, Mitigation, Farmers

Introduction

The 2023 Intergovernmental Panel on Climate Change (IPCC) Synthesis Report shows a global knowledge of climate change, its widespread impacts, and the efforts by the state and non-state actors to save and preserve the environment from climate change impact. It recognizes the role of human environmental knowledge and its linkage between climate change adaptation, mitigation, ecosystem health, human well-being, and sustainable development. It identifies Africa as one of the continents that is adversely impacted by climate change. It highlights its huge impacts on rural African communities, exposing millions of people to acute food insecurity, resulting in human vulnerability and leading to competition over land and/or water resources. Also, it shows climate change impact on human health, livelihoods, and key infrastructure such as transportation, water, sanitation, and energy systems resulting in economic losses, and the disruptions of services among the urban population (Ezea, 2023).

Nigeria is particularly vulnerable to climate change due to its heavy reliance on rain-fed agriculture, while the Federal Ministry of Environment, Climate Change Department 2011 report shows how climate change impacts Nigeria with its consequences resulting in poor agricultural yield and loss of livestock farming. It warned that if effective mitigation and adaptation action is not done, Nigeria will lose about 11% of its Gross Domestic Product (GDP) to climate change and may likely rise to 30% by the year 2050. It estimates the loss to be between N15 trillion and N69 trillion. Furthermore, climate change impacts agricultural productivity in Nigeria in many ways making food production unsustainable. It has resulted in a change in rainfall patterns, altering the planting and harvesting seasons. Also, it has brought a change in weather conditions such as a rise in temperature, drought, floods, and an increase in pests, which is significantly leading to a decrease in crop yields and threatening livestock farming (Kelechi, et al 2022).

The Federal Capital Territory (FCT-Abuja) is no exception, rural farmers are facing increasing temperatures, changing rainfall patterns, and extreme weather events with many of them recounting how Climate Change is impacting them leading to the decay of yams in the storage facilities, reduction in grain yield, and livestock farming (Mawa, 2023). There is a significant change in rainfall patterns and the distortion in weather conditions as a result of climate change that is hugely impacting agricultural productivity in FCT, resulting in poor crop yields (Aondoakaa, 2021).

Climate change is exacerbating conflict among herder farmers in communities across Nigeria further impacting agriculture and food security. For instance, (the Internal Displacement Monitoring Centre) report shows that between 2015 to 2018, 2,500 deaths were recorded and 62,000 were displaced due to farmer-herder conflicts. International Crisis Group report shows in 2019, 1,300 deaths were recorded and 300,000 persons

were displaced over herder-farmer conflict. Similarly, the Centre for Development and Democracy report shows that 71% of conflicts in Nigeria are related to climate change (Akpan, 2023). The huge impact of climate change especially in agriculture, has led to global and local calls for interventions that will address the issues with Africa being the most vulnerable as the major focus for adaptation and mitigation action (Rigaud, et al 2019).

Nigeria has shown commitment to addressing climate change through policy interventions and legislation, however, communication practitioners especially within the NGOs often reduce environmental and climate change communication to information sharing and persuasion to mobilize people to protect the environment. However, from a broader perspective, climate change communication is shaped by people's experiences, and their mental and cultural inclinations that underline their understanding of the issues. Some development scholars and practitioners see the transmission of messages from one channel to another as a one-way process that does not allow feedback from the targeted population and affects effective communication (Ezea, 2023).

The extent to which rural farmers will embrace mitigation and adaptation actions is largely dependent on the effective deployment of Indigenous communication practices to educate them about the issues that shape the way they perceive and respond to Climate Change (Depoux et al 2017; Mawa 2023). Tarhule (2005), observed that that climate change communication targeting rural farmers and other populations must be mutual and symbiotic to allow all parties to understand the issues and act. He observes that numerous climate change communications targeting rural farmers and other societal segments do not allow for indigenous communication approaches that will make the targeted beneficiaries understand what the issues are.

Historically, rural farmers in FCT possess rich traditional knowledge and cultural practices that have enabled them to adapt to their environment for generations (Dauda, 2010). Dauda specifically argues that indigenous communication approaches, using local languages for storytelling, proverbs, and community gatherings, have been used to share knowledge and wisdom on climate-related issues among FCT farmers (Dauda, 2010).

Objective of the Study

This study aims to bridge this knowledge gap in the existing practice by analyzing indigenous communication approaches for climate change mitigation and adaptation among rural farmers in FCT-Abuja, using Kawu, Zuma, Igu, Kaida, Dobi and Dota rural farming communities in Bwari and Gwagwalada Area Councils respectively as case studies. It aims to analyze indigenous knowledge and communication strategies for climate change mitigation and adaptation among rural farmers in FCT-Abuja, Nigeria. The study specific objectives are to:

- i. Describe the demographic characteristics of rural farmers in the FCT, Nigeria;

- ii. Assess the level of awareness of climate change indicators by the respondents;
 - iii. Identify the indigenous communication approaches used by the respondents to share climate change information.
 - iv. Identify the indigenous adaptation measures adopted by the respondents to mitigate climate change impacts.
- v. Examine the respondents' perceived impacts of climate change on agriculture.

Theoretical Framework

This study adopts Indigenous Knowledge Systems (IKS) and Participatory Communication as theoretical frameworks of analysis. IKS is not known to have been propounded by a single scholar, it emerged from a collective work of indigenous scholars, researchers, and communities globally. George (2012), in his works, *Indigenous Knowledge and Anti-colonial Thought*, and *Indigenous Anti-Colonial Knowledge as 'Heritage Knowledge' for Promoting Black/African Education in Diasporic Context*, challenges dominant Western knowledge systems and advocates for the recognition and validation of Indigenous knowledge and perspectives. His contribution led to a wider understanding of the role indigenous knowledge plays in community development and societal preservation.

Linda (1999), in her work *Decolonizing Methodologies, Research & Indigenous People*, posits that the Western push for their supremacy over the Indigenous knowledge system is faulty because Indigenous people have knowledge systems that they have developed and relied upon over the years for their development and growth. She argues that the community's survival and struggle are rooted in its indigenous knowledge system. Makere (2005), used her "Cultural Studies, Indigenous Knowledge and Pedagogies of Hope" for the justification and support for the Indigenous knowledge system. She argues that the world cannot be restricted to a particular form of knowledge, cultural, and ideological framework. She posits that the study of culture and ethnicity is significant and profoundly relevant to the understanding of pedagogies.

The Indigenous Knowledge Systems argues that every society has over a long period developed its unique philosophies and knowledge that govern its interaction and dealings with its natural environment. The philosophies and knowledge are so significant that they inform the basis on which society decides the fundamental aspects of their day-to-day life. It cannot be separated from society, it is integral to their culture that encompasses language, social classification, resource use practices, social interactions, ritual, and spirituality. Every society believes that its Indigenous Knowledge System is supreme and cannot be replaced with any other knowledge and that it is a critical connection in which they build sustainable social and economic development.

Historically, rural farmers in FCT possess rich traditional knowledge and cultural practices that have enabled them to adapt to their environment for generations. The FCT rural farmers have over the years developed indigenous communication methods of storytelling, proverbs, and community gatherings to share knowledge and wisdom on climate-related issues among themselves. This study sees indigenous knowledge as established traditionally accepted knowledge and practices of indigenous peoples, in their interaction and relation among themselves and their environment. Also, indigenous knowledge and indigenous communication implemented within the cultural sensitivity of the locals, play a significant role in climate change understanding and mobilize them for adaptation and mitigation practices. This study strongly believes that communication strategy targeting the rural population must consider their cultural sensitivity and ensure messages are crafted and conveyed in line with their culture. It is within this context that this study adopts Indigenous Knowledge Systems (IKS) as a theoretical framework of analysis.

The study also adopts Participatory Communication theory by Paulo Freire as a theoretical framework of analysis, Freire (1973), notes that communication is not just the transfer of information from one person to another, but a process that allows for the active participation of people in dialogue and negotiation on issues affecting them for solutions that will improve the quality of their lives. Proponents of Participatory communication theory such as Anaeto, Onabajo, and Osifeso (2008), note that it facilitates effective knowledge diffusion and allows community members to design homegrown solutions that are suitable to them. Mefalopulos (2008), outlines attributes of participatory communication theory as (1) it emphasizes the people (2) guides and views development from indigenous and local perspectives (3) empowers the people to actualize their rights. Mishra (2017), asserts that ‘participatory communication theory facilitates active participation of people in a face-to-face interaction through consultation and dialogue on issues affecting them. The relevance of participatory communication theory to this study lies in its support for active people's involvement in decision-making on issues impacting them through a communication process. Thus, through a participatory communication process, FCT-Abuja rural farmers will effectively participate in climate change communication through indigenous communication channels.

Methodology

This study adopted Kawu, Igu, Zuma, Dota, Kaida, and Dobi communities in Bwari and Gwagwalada Area Councils of FCT-Abuja as case studies. Qualitative and quantitative methods involving Focused Group Discussions and surveys using questionnaires were used for data gathering and analysis. The FGDs and questionnaires were focused on the research objectives as mentioned above.

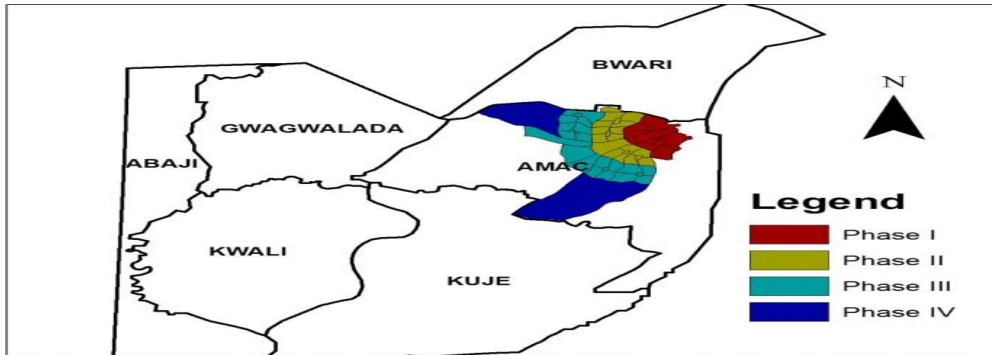


Figure1: Study Area

Study Sample

Information obtained from the Special Agro Processing Zones (SAPZ), a federal government initiative established to promote increased productivity and agricultural value chain, shows that as of 2023, Gwagwalada Area Council has an estimated number of 15,100 registered farmers while Dobi ward where the three communities studied are located has an estimated number of 1,856 registered farmers. Bwari Area Council has an estimated number of 14,317 registered farmers and the Kawu ward where the three communities studied are located has an estimated number of 1,892. This makes a total population study size of 3,748 rural farmers. The study held six Focused Group Discussions among 42 rural farmers, seven in each of the six communities studied. 306 questionnaires were administered among 306 farmers, making a total of 348 study samples.

Results and Discussion

Although the six case studies in this research are not a full representation of FCT-Abuja, they give an insight into how Indigenous communication approaches play a significant role in climate change mitigation and adaptation among rural farmers. The study found the following:

Indigenous Communication Approaches for Climate Change Mitigation and Adaptation among Rural Farmers in FCT

Information from the FGDs and questionnaire respondents show that rural farmers in FCT rely on Indigenous communication approaches of community gathering, storytelling and elders teaching to access climate change information. According to farmer in Zuma community, they have relied on community gathering and knowledge sharing as their means for sharing climate change information. For them, they trust information gotten from their peer farmers through community gathering and knowledge sharing more than the information from the conventional media. According to them, the elders who share climate change information through community gathering, have better knowledge of climate change issues and weather forecasts for planting and harvesting season more than what is obtainable on radio and television. The farmers affirmed that

all the knowledge they have about climate change, its impact, mitigation, and adaptation were obtained from the Indigenous communication approach of community gathering where the elders and experienced farmers share information about weather change and the best approach to addressing the issues to achieve better farming and crop yields. The rural farmers confirmed that many of them do not listen to the radio, watch television, or have access to social media, and therefore all that they know about climate change, its mitigation, and adaptation was learned through community gathering and knowledge sharing.

“We do not believe in what government and its agents say on Radio and Television about weather conditions and farming practices, they do not have better information and are misleading the farmers, rather we believe elders and experienced farmers who teach and share experiences on weather and best farming practices when we gather together in the evening to discuss when we close from the farm”, one of the participants said

Farmers from the Igu community, said they have over the years relied on community gatherings to get and share information about climate change and mitigation and adaptation practices. For them, information and knowledge obtained from community gatherings are trustworthy more than what is obtainable from the media, according to them, media information is not the reflection of the true situation on the ground. They pointed out that farmers believe and act on the information obtained through community gatherings because those who share them are experienced and knowledgeable on the issues. According to them, the elders often tell stories of climate change and best agricultural practices to their children at night. The farmers said the storytelling approach has played a major role in educating a good number of them on climate change and sustainable agricultural practices. One of them explained how his father as far back as 1984 had used storytelling to teach younger farmers about how weather is affecting agriculture and the best approaches to addressing the problem.

“Apart from community gathering, storytelling is another best approach in sharing climate change information and educating farmers on the issues, as far back as 1984, my father gathered us together to tell us stories of how change in weather is affecting farming and the methods on how to address the issues for better crop yields, what I am saying is that climate change has been there and older farmers have deployed indigenous approaches of community gatherings and storytelling to teach about them and solution”, the participant said.

The farmers said the practice of relying on community gatherings for sharing climate change information and teaching farmer mitigation and adaptation practices not only enables rural farmers to have a better understating of climate change issues but facilitates a process that allows them to actively participate and find solutions on issues affecting them which makes it better than the conventional media used by the government and NGOs. The farmers recommend governments and NGOs work with Indigenous farmers and leverage the community gathering approach in educating

farmers on climate change mitigation and adaptation practices. Also, they pointed out that community gathering is effective because it is not about climate change information sharing but a practice that is embedded in their culture as a way of social interaction and solving community problems.

Rural farmers in the Kawu community rely on community gathering and knowledge sharing to access information and learn about climate change. This approach is the most trusted and acceptable among rural farmers, it enables them to understand climate change issues better and the best mitigation and adaptation practices. The farmers do not trust information from the media, they consider it lies by the government to manipulate the real situation of how climate change is impacting the farmers. The community-gathering approach of information sharing is so ingrained among the Kawu people that it is part of their culture that shapes the way they communicate and share information among themselves on issues impacting them. The farmers said they have over the years relied on community gathering and knowledge sharing from elders and experienced farmers to learn about climate change, mitigation, and adaptation practices. According to them, older farmers who share information about climate change and sustainable agriculture are so knowledgeable and experienced that no one in the government has such knowledge. For them, farming and agriculture are a cultural practice among the people that have been handed over to them by their forefathers and sustained for many years, the use of community gathering is not only about information sharing but a practice that has been established as a way of ensuring that community members effectively participate in dialogue and decision-making processes on issues affecting them.

Findings from the Zuma, Igu, and Kawa communities validate the Indigenous Knowledge Systems (IKS) and Participatory Communication Theories adopted by this study as theoretical frameworks of analysis. The IKS argues that every society has over a long period developed its unique philosophies and knowledge that govern its interaction and dealings with its natural environment that cannot be separated from its culture.

Rural farmers in the Dota community rely on the Indigenous community gatherings approach for climate change information and to learn about mitigation and adaptation practices. Farmers in the community learn from experienced and knowledgeable farmers about climate change and mitigation and adaptation practices through community gatherings. The practice is that farmers gather together under trees usually during hot weather conditions to discuss changes in weather conditions, their impacts on farming activities, and proffer solutions. The rural farmers in the community do not depend on radio and have access to television and rely on the community gathering approach of climate change information sharing and learning as the most trusted channels of communication among them. Farmers in the Dota community do not have access to television and do not rely on radio for climate change information, but rather assemble under trees, especially during hot weather to exchange information and ideas about

climate change issues and learn mitigation and adaptation approaches. According to them, community gathering and knowledge sharing is a cultural practice that facilitates a process that allows farmers to actively participate in the discussions and decision-making on issues affecting them. The farmers recommended that the government and its agents should stop using radio, television, and social media to educate rural farmers about climate change issues because they do not listen to radio watch television, and do not also understand English which is used as the language of communication. Rather, the government and its agents should have a dedicated agricultural extension official who understands and speaks local languages well to visit the rural communities once in week to educate them on the issues of climate change mitigation and adaptation using a community gathering approach and local language as the language of communication and not English. According to them, this is one sure way of getting rural farmers to understand the issues beyond what they already know.

Rural farmers in the Kaida community rely on the Indigenous communication approach of community gathering to access information about climate change, mitigation, and adaptation. The approach is effective among the farmers because they trust and believe in the Indigenous approach of community gathering more than what is obtainable in the media. They believe experienced and knowledgeable farmers who share information about climate change, mitigation, and adaptation practices for sustainable agriculture at the community gathering of farmers are more knowledgeable on the issues compared to those who share the same information on radio, television, and social media. According to them, it is during the gathering that young and inexperienced farmers learn from knowledgeable and experienced about issues of change in weather conditions and best practices that enable them to achieve sustainable agricultural practices. The farmers said that community gathering is a cultural practice among the Kaida people which serves as a means of social interaction that allows the people to actively participate in the discussion and solution of issues affecting them.

Community gathering and elder teaching are the Indigenous communication approaches rural farmers in the Dobi community rely on to access climate change information, mitigation, and adaptation practices. The approach is hugely effective among the Dobi people, making younger and inexperienced farmers learn about climate change mitigation and adaptation practices that enable them to achieve sustainable agriculture. The farmers said there is no other effective way they access information about climate change mitigation and adaptation, other than community gathering that facilitates a process where older and experienced farmers share information about climate change and sustainable agriculture.

The study findings authenticate the Indigenous Knowledge Systems and Participatory Communication theories adopted by this study as the theoretical frameworks of analysis. The farmers' use of community gatherings as established Indigenous practices that enable them to learn how to live and interact with their environment, is the crux of the Indigenous Knowledge Systems argument that every society has its own established

Indigenous Knowledge Systems in which it carries out how the people live and interact with their environment. Additionally, the community gathering approach that facilitates a process that enables the farmers to actively participate in the discussion and solution on issues affecting them through a communication process, is the core fundamentals argument the participatory communication theory is standing on.

Demographic Characteristics of Rural Farmers in FCT

The majority of rural farmers in FCT are adults between the ages of 31-40 followed by a youth population between the ages of 18-30. This shows that a good population of youth are engaged in farming activities in the rural communities of FCT. Rural farmers in FCT are predominantly males. The majority of rural farmers in FCT do not have formal education, however, some of them who have formal education did not exceed primary education while only tiny population among them have secondary and tertiary education. The majority of the rural farmers in FCT are from the Gbagyi ethnic Nationalities who are of Christians faith, followed by Muslims with very few of them practicing Traditional Religion.

Climate Change Awareness among Rural Farmers in FCT

There is a high level of climate change awareness among rural farmers in FCT. All the 306 respondents in the questionnaires and 42 FGD participants in the study affirmed that they have good knowledge of climate change and its indicators. The farmers affirmed changes in rainfall patterns and hot weather conditions as major indicators of climate. For instance, farmers in the six communities studied said they have observed notable changes in weather conditions in the last 10 years that are resulting in changes in rainfall patterns and excessive heat. According to the farmers, the heat arising from the hotness of the weather conditions is forcing some farmers to abandon their houses for thatch houses with open ventilation to be able to sleep at night. They affirmed that the change in rainfall patterns as a result of climate change has since distorted farmers' seasonal calendars and planting dates. According to them, before climate change impact, all farmers in the community knew that rain starts falling by April and they get ready for planting from that month, but presently the rainfall patterns have been distorted in such a way that farmers no longer follow their traditional seasonal calendar and planting season.

Indigenous Adaptation Measures to Mitigate Climate Change Impacts

Rural farmers in FCT adopt the use of crop rotation, soil conservation, change in planting date and planting of drought resistant crops as Indigenous measures to mitigate climate change impacts. However, crop rotation practice is popular among farmers as the most effective measure to mitigate climate change impacts on their farming activities. The practice is that farmers do not repeat planting of the same type of crop on the same piece of land, for example, if maize is planted on a particular piece of land this year, yam will be planted on it next year.

Soil conservation is another Indigenous measure among the farmers to mitigate climate change impacts. The farmers use the application of manure for soil nutrient replenishment to improve its condition for better crop yields. Through this approach, rural farmers in FCT have been able to record good harvests without relying on

fertilizers. Additionally, changes in planting dates and planting of cover crops are also other Indigenous measures to mitigate climate change among rural farmers in FCT. Rural farmers in Zuman and Kawu communities said the Indigenous mitigation practices are the most effective that were transferred to them by their father as culture and norms as solutions to addressing environmental impacts on farming activities.

The adoption of Indigenous methods of crop rotation, soil conservation, change in planting dates and droughts tolerant crops by the FCT rural farmers to mitigate climate change impacts, validates the use of Indigenous Knowledge System (IKS) as a theoretical framework of analysis in this study. The fundamental tenets of IKS is that every society has its own IKS that it has developed over a long period which it relies on to live and interact with its environment. Therefore, this fundamental on which IKS rest its argument is in conformity to the practices among rural farmers in FCT which validates its adoption as a theoretical framework of analysis in this story.

Climate Change Impacts on Agriculture

Changes in rainfall patterns resulting in poor crop yield are notable climate change impacts on agriculture in rural farming communities of FCT. Rural farmers in FCT are experiencing inadequate rainfall accompanied by heatwaves that are making their yam seedlings not germinate and resulting in their decay inside the soil. Additionally, it is resulting in stunted growth of maize, rice, millet, and Soya beans. Crops such as Rice and Guinea corn that require six months to produce die as a result of inadequate rainfall, resulting in poor crop yield and making the farmers record poor harvests. Ultimately, the impacts of climate change on agriculture affect farmers' income making it difficult for some of them to take care of their basic needs including funding their children's education.

Farmers in the Dota community affirmed that climate change is impacting their agricultural activities. According to them, they are witnessing unbearable changes in weather conditions that are resulting in a shortage of rainfall accompanied by hotness of weather conditions which is affecting their crop, leading to poor harvest and resulting in income and food poverty among farmers.

Farmers in the Kaida community are experiencing poor crop yield and harvests due to a shortage in rainfall arising from climate change impacts. The farmers in different narratives, recounted how shortage of rainfall is affecting melon and maize growth resulting in their poor yields leaving farmers with poor harvests that affect their income and threaten their livelihood. According to the FGD participants, farmers who in the past harvested 30 bags of maize now struggle to harvest 15 bags due to a drastic change in weather conditions.

Farmers in Dobi, Kawu, Igu, and Zuma communities are experiencing the same patterns of climate change impact on farming activities. Shortage of rainfall is resulting in farmers in the communities recording poor crop yields and harvest in beans, rice, maize,

melon, guinea corn, and potatoes. The communities in the last 10 years have been contending with a shortage of rainfall, heatwaves, and droughts that hugely impact their agricultural activities. All FGD participants in the communities affirmed that before the drastic change in weather conditions, rainfall commences by April of every year, but with the current situation by May, rain is yet to fall. A situation that is hugely impacting farming activities in the rural communities.

Animals get ill and die as a result of excess hotness in weather conditions making farmers who invest in livestock lose income. In all the communities studied, farmers in different narratives recounted how they were losing their animals to death as a result of excessive hotness in weather conditions. For instance, FGD participants in the Igu community disclosed that each farmer loses about 10 goats estimated to cost about N500,000 annually due to excess hotness of weather conditions. According to them, in many instances, when the animals get ill, the owners are forced to sell them for a cheaper price before they die to avoid losing all investments. They explained that in many instances farmers' goats that are valued at N50, 000 sold for N15,000 when they fall ill.

Conclusion

This study was carried out with the objectives of identifying the Indigenous communication approaches used by rural farmers in FCT to share climate change information, assess the level of climate change indicators awareness among rural farmers in FCT, identify the Indigenous adaptation measures adopted by rural farmers in FCT to mitigate climate change impacts, examine rural farmers in FCT perceive impact of climate change on agriculture and describe the demographic characteristics of rural farmers in FCT. The study found that rural farmers in FCT rely on Indigenous communication approaches of community gathering, storytelling, and elder teaching to access climate change information. They trust, believe, and act on climate change information obtained from experienced and older farmers through community gatherings and storytelling approaches more than the ones gotten from the conventional media. The Indigenous communication approach of community gathering is an established cultural practice among rural farmers in FCT not only to disseminate and access climate change information but also a means of communal interaction that enables community members to actively participate in the discussion and solution of issues affecting them through a communication process.

Rural farmers in FCT use Indigenous crop rotation methods, change in plating dates, and planting drought-resistant crops as adaptation measures to mitigate climate change impact. These Indigenous methods are ingrained in their culture and passed on to them through generations. They are seen as the best form of sustainable agricultural practices among the people.

There is a high level of climate change awareness among rural farmers in FCT. The farmers see changes in rainfall patterns and excess hotness in weather conditions

resulting in poor crop yields, illness, and death of their livestock as obvious indicators of climate change and its impact on agriculture in their respective communities.

Rural farmers in FCT are predominantly males from different ethnic Nationalities, dominated by the Gbagyi ethnic Nationalities who are of the Christian faith, and a good number of Muslims with small number of them practicing Traditional religion. The majority of them do not have formal education and rely on Indigenous knowledge system passed on them by older generation to carry out agricultural practices.

Recommendations

Based on the findings, the study makes the following recommendations

- (i) State and non-state actors should deploy Indigenous communication approaches for climate change communication targeting mitigation and adaptation practices among rural farmers. That way, rural farmers will actively participate in the discussion on climate change issues, which will enable them to have a better understanding of the issues and motivate them to take mitigation and adaptation practices seriously.
- (ii) Climate change communication by state and non-state actors targeting rural farmers should prioritize the use of local languages against the use of English as a language of communication. That will guarantee their understanding of the issues and inspire them to take up mitigation and adaptation practices.
- (iii) State and non-state actors should reduce the reliance on radio and television as the medium of communicating climate change when targeting rural farmers by prioritising the Indigenous approaches of community gatherings and storytelling which have proven to be effective among rural populations.
- (iv) Climate change communication by the state and non-state actors targeting mitigation and adaptation among rural farmers should be designed in line with Indigenous practices. That way, they will be acceptable and successful among rural farmers.
- (v) State and non-state actors should carry out a baseline study to identify the most appropriate communication approaches by the target population(s) before designing and implementing communication strategies.
- (vi) Development communication practitioners should conduct a study to investigate why climate change communication is failing among rural populations in Africa.

References

Anaeto, S. Onabajo, O., and Osifeso, J. (2008). Models and theories of communication. Bowie, Maryland: African Renaissance Books Incorporated.

- Aondoakaa, S. (2021). Effects of climate change on agricultural productivity in the Federal Capital Territory (FCT), Abuja, Nigeria. *Ethiopian Journal of Environmental Studies and Management EJESM* 5 (4)
- Akpan, Z (2023) Nigeria Climate Change Narratives, Ola Publishers, Abuja
- Dauda, D. (2010). History of Abuja Indigenous People. Osas Printing Press, Abuja
- Depoux. A, Hémono. M, Puig-Malet. S, Pédrón. R, Flahault. A. (2017). Communicating Climate Change and Health in the Media. *Public Health Reviews*.
- Ezea, J (2023). Environmental Communication Practice, Ade Publishers Ltd, Lagos
- Freire, P. (1973). Education: The practice of freedom. London: Writers and Readers Publishing Cooperative.
- George, D. (2012). Indigenous Anti-Colonial Knowledge as 'Heritage Knowledge' for Promoting Black/African Education in Diasporic Context. *Decolonization: Indigeneity, Education & Society* 1(1).
- Kelechi, J. Vincent, O. and Emmanuel, M. (2022). The impact of climate change on food and human security in Nigeria. *International Journal of Climate Change Strategies and Management* Volume 14 (2)
- Linda, S. (1999). Decolonizing Methodologies, Research & Indigenous People. Zed Books Ltd, London.
- Makere S (2005). Cultural Studies, Indigenous Knowledge & Pedagogies of Hope. *Policy Futures in Education*, 3 (2)
- Mawa. F. (2023), *What is Climate Change? Community Perception*, Ayo Press, Abuja.
- Mefalopulos, P. (2008). Development Communication Sourcebook: Broadening the Boundaries of Communication. Washington: International Bank for Reconstruction and Development/The World Bank
- Rigaud, K. Sherbinin, Jones, J. Bergmann, V. Clement, K. Ober, J. Schewe, S. Adamo, B. McCusker, S. Heuser, A. Midgley. (2018). Groundswell: Preparing for Internal Climate Migration. World Bank, Washington, DC.
- Tarhule, A (2005). "Climate Information for Development: An Integrated Dissemination Model". Paper Presented in the 11th General Assembly of the Council for the Development of Social Science Research in Africa (CODESRIA) in Maputo, Mozambique, December 06- 10, 2005.