

**STRATEGIC COMMUNICATION TOOLS AND CLIMATE-SMART AGRICULTURAL PRACTICES IN  
TARABA STATE: PERSPECTIVES OF AGRICULTURAL OFFICERS AND RURAL FARMERS**

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**Abstract**

This study explored the use of strategic communication tools by the Taraba State Government in promoting climate-smart agricultural practices, with perspectives drawn from agricultural officers and rural farmers. The objectives of the study were to determine the extent of communication utilisation, identify the strategic tools employed, and assess how these strategies facilitate access to agricultural information. The study adopted a descriptive survey design; data were collected from 347 respondents using structured questionnaire complemented by qualitative data from extension officers. Findings revealed that radio, mobile technology, and community-based platforms remain the dominant tools, with 64% of respondents acknowledging their use and 56.8% affirming their significant influence on farming practices. However, a considerable proportion of farmers expressed neutrality or dissatisfaction, citing barriers such as poor digital infrastructure, low literacy, and inadequate localisation of content. The results demonstrate that while strategic communication has positively influenced behavioural change and innovation adoption, its reach and impact remain uneven across communities. The study concludes that effective promotion of climate-smart agriculture in Taraba State requires more inclusive, culturally grounded, and accessible communication strategies. It recommends the strengthening of rural digital infrastructure, integration of local languages, and regular training for both farmers and agricultural officers to enhance the adoption of sustainable practices.

**Keywords:** *Climate-Smart Agriculture, Communication Tools, Rural Farmers, Strategic Communication, Taraba State*

**Introduction**

Agriculture remains a cornerstone of global economic development and food security, with effective communication playing an increasingly pivotal role in transmitting innovations and improving farming practices. According to the Food and Agriculture Organisation (FAO, 2021), the absence of strategic communication inhibits the transfer of agricultural knowledge, thus compromising efforts to enhance productivity and sustainability. In regions where agriculture forms the primary livelihood, particularly in developing countries, communication strategies become essential tools in bridging the gap between scientific research and local practices (Asemah, 2017). As the agricultural sector grapples with challenges related to climate change and population growth, the emphasis on strategic communication has never been more crucial in promoting sustainable farming and ensuring that critical information reaches the right stakeholders. This underlines the fact that without deliberate and well-structured communication systems, the impact of agricultural innovations will remain limited.

In Sub-Saharan Africa, agriculture is central to the economic well-being of the population, yet its productivity remains undermined by weak communication systems. The World Bank (2022) reports that despite numerous initiatives, the adoption of improved agricultural practices remains low, largely due to ineffective communication methods. In Nigeria, the situation is compounded by inconsistent strategies and poor coordination among stakeholders, which hinder the dissemination of relevant agricultural information (Olawale & Adebayo, 2022). The emergence of audience-response methods, including phone-ins and social media engagement, has added a new dimension to how information is received and processed (Obaje, 2020). In the North-East, particularly in Taraba State, environmental

stressors such as conflict, poverty and climate change further limit the reach of communication efforts, leaving farmers poorly informed and disconnected from modern agricultural advancements (Isah, Abdulazeez & Asemah, 2021). **This situation reflects a communication gap that threatens both agricultural productivity and food security in the region.**

Experiences from countries like India and Kenya illustrate how strategic, context-specific communication approaches, such as mobile platforms and participatory communication, can empower farmers and improve agricultural outcomes (Kumar & Singh, 2021; Mwangi, 2022). These successes underscore the potential for similar models to be adapted in Taraba State, where a coherent and culturally responsive communication framework is currently lacking. Yusuf & Garba (2023) emphasise that in remote and conflict-affected areas, the absence of such strategies severely hampers the flow of vital information. The integration of mobile and digital technologies offers a promising solution, but their effectiveness hinges on aligning content with the farmers' literacy levels, socio-cultural realities and technological readiness (Olatunji & Bello, 2023). **Therefore, the gap this study addresses lies in the limited empirical evidence on how strategic communication strategies are being utilised by the Taraba State Government to promote climate-smart agricultural practices.** Consequently, this study seeks to evaluate the existing strategic communication approaches in Taraba State and explore tailored solutions that can address the specific agricultural communication needs of farmers in the region.

### **Statement of the Problem**

Agriculture remains a vital sector in Taraba State, sustaining the livelihoods of a large portion of the population. Despite its vast potential, the sector continues to face challenges, particularly in the dissemination of agricultural innovations and best practices. Ineffective communication strategies have resulted in limited adoption of improved farming techniques, as noted by Ayodele and Ibrahim (2022). The failure of agricultural extension services to effectively convey critical information, due in part to a lack of culturally and linguistically appropriate communication methods, has further widened the gap between research institutions and local farmers (Okoye et al., 2023). **This communication gap has contributed to low productivity, weak adoption of climate-smart innovations, and slow progress in agricultural transformation across the state.**

Additionally, the dynamic nature of agriculture in Taraba State, shaped by climate variability, pest outbreaks, and market uncertainties, demands adaptive communication strategies. However, as Usman (2023) observes, the current communication frameworks are outdated and insufficiently responsive to these changes. Traditional channels such as radio and town meetings lack the interactivity needed to engage farmers effectively, while newer technologies remain underutilised. Musa and Abubakar (2023) argue that participatory approaches, including mobile platforms and peer learning systems, could improve information flow and encourage innovation adoption. Yet, there is limited empirical evidence on whether the Taraba State Government has effectively deployed such tools or even carved a unique approach in form of strategic communication. Additionally, little is known about how farmers perceive and utilise the communication tools. This knowledge gap catalyses the need for an in-depth study of the communication strategies in use, their effectiveness, and their relevance to the specific agricultural realities of rural farmers in Taraba State.

### **Research Objectives**

The general objective of this study was to examine the use of strategic communication tools by the Taraba State Government in promoting climate-smart agricultural practices, with insights from agricultural officers and rural farmers. The specific objectives were to:

1. Assess the extent to which the Taraba State Government utilises strategic communication approaches in promoting climate-smart agricultural practices.
2. Identify the strategic communication tools employed by the government in disseminating agricultural information to farmers.
3. Examine how the use of these strategic communication tools facilitates farmers' access to and adoption of agricultural innovations.

### **Research Questions**

1. To what extent does the Taraba State Government utilise strategic communication approaches in promoting climate-smart agricultural practices?
2. What strategic communication tools are employed by the government in disseminating agricultural information to farmers?

3. In what ways does the use of these communication tools facilitate farmers' access to and adoption of agricultural innovations?

### **Review of Related Literature Strategic Communication**

Communication remains an integral aspect in daily life (Halim & Aziz, 2023). This makes it indispensable in all human endeavours including agriculture. Accordingly, communication in agriculture is important and its strategic use has continued to garner research attention. Strategic communication in agriculture refers to the deliberate use of diverse communication channels to achieve development goals. Omotayo (2023) describes it as a structured process that enhances farmers' understanding of innovations, while Akintunde (2022) stresses its behavioural influence through targeted messaging. Eze and Nwosu (2023) emphasise its multi-channel nature, and Afolabi (2023) highlights its participatory dimension, which fosters collaboration among stakeholders. Bello (2023) links strategic communication to agricultural policy implementation, underscoring the need for coherence.

As Alabi and Adeoye (2023) argue, strategic communication transcends message delivery by aligning communication with broader agricultural objectives such as productivity, sustainability, and resilience in the Nigeria context, Olatunde and Ibrahim (2022) note that effectiveness depends on cultural relevance and context sensitivity, particularly in rural areas. This underscores the importance of combining modern digital tools with locally grounded approaches to promote the adoption of climate-smart agricultural practices.

### **Agricultural Practices and Innovation Adoption**

Agricultural practices encompass systematic methods aimed at improving productivity, shaped by technology, environment, and socio-economic realities. Adewale (2023) describes them as structured techniques to enhance crop and livestock outputs, while Yusuf (2022) emphasises efficient use of natural resources. Eze (2022) situates agricultural practices within socio-economic frameworks, noting their importance to rural livelihoods in Nigeria. These practices are dynamic, evolving in response to environmental pressures. Ibrahim (2024) highlights indigenous adaptations such as intercropping and crop rotation, while Nwankwo (2023) underscores risk management strategies that build resilience to climate variability and market instability.

Closely linked to agricultural practices is the adoption of innovations. Rogers (2003) conceptualises adoption as a multi-stage process of awareness, evaluation, trial, and eventual use. Adoption is shaped by farmers' literacy levels, cultural realities, and access to communication (Yusuf, 2022; Okoye et al., 2023). Evidence shows that adoption improves when information is participatory and contextualised. Ojo and Adebajo (2022) found that local language use and interactive platforms foster behavioural change, while successes in Kenya and India demonstrate that participatory and mobile-based communication models strengthen uptake of innovations (Kumar & Singh, 2021; Mwangi & Otieno, 2022). In Taraba State, however, weak infrastructure and limited extension coverage constrain adoption, leaving many farmers aware of innovations but unable to apply them effectively (Isah, Abdulazeez & Asemah, 2021).

### **Strategic Communication in Agricultural Development**

Strategic communication is central to bridging the gap between agricultural research and rural practice. Olufemi and Akinola (2023) observe that tailored strategies determine the success of agricultural programmes. Adeoye (2023) shows that blended approaches, combining radio with mobile platforms, expand reach to low-literacy populations.

Traditional approaches such as radio broadcasts, community meetings, and extension services remain important due to affordability and familiarity, but they face challenges of poor infrastructure and underfunding (Okoro & Asogwa, 2023; Ijeoma & Chukwudi, 2022). Modern tools, especially mobile-based platforms and digital media, have transformed agricultural communication by enabling real-time, interactive, and scalable solutions. Successes in Kenya (M-Pesa), Nigeria (Growth Enhancement Scheme), and India (e-extension services) demonstrate their potential, though barriers such as poor connectivity, high costs, and low digital literacy remain. Nnaji and Ifeanyi (2023) therefore recommend integrating both traditional and digital strategies to maximise reach and inclusivity.

Access to agricultural information in Taraba State is limited by low literacy, language diversity, and poor infrastructure. Many farmers cannot access content in written or digital formats, creating gaps between digitally connected and marginalised farmers. Strategic communication can mitigate these challenges by localising content, using indigenous languages, and combining multiple delivery platforms. Partnerships with community leaders further

enhance trust and message acceptance. Ultimately, strategic communication fosters equitable access to innovations and promotes behavioural change, thereby advancing agricultural development.

### Theoretical Framework

The study was anchored on the Participatory Communication Theory (PCT), developed by Ronaldo Gerardo in 1991, highlights the importance of involving local communities particularly farmers in the communication process for agricultural development. This theory promotes collaboration among farmers, extension agents, and researchers to ensure that agricultural information is relevant, context-specific, and easily adoptable. In regions like Northeast Nigeria, including Taraba State, where literacy levels are low, cultural diversity is vast, and extension services are weak, participatory communication offers an inclusive, dialogical approach that empowers farmers to contribute their indigenous knowledge, perspectives, and feedback. By encouraging two-way communication and community involvement, PCT enhances the cultural appropriateness of agricultural interventions and improves their long-term sustainability.

While PCT offers significant benefits such as community empowerment, improved adoption of innovations, and respect for indigenous knowledge, it also comes with notable challenges. Its implementation is resource-intensive, requiring time, skilled facilitators, and adequate funding, and it can be hampered by the dominance of local elites and resistance from extension agents trained in top-down methods. Despite these challenges, PCT remains highly applicable through tools like focus group discussions, participatory mapping, and locally tailored radio programmes. These methods help ensure that agricultural messages are co-created, culturally relevant, and widely accessible. Overall, PCT aligns well with strategic communication goals for agricultural development in Taraba State, making it a valuable theoretical foundation for enhancing farmer engagement and sustainable agricultural practices.

### Methodology

This study employed a mixed-method approach, combining quantitative and qualitative techniques to enhance the validity and richness of its findings. Quantitative data were gathered through structured questionnaires distributed both online and in-person across key agricultural regions in Taraba State. The survey enabled statistical generalisation of stakeholders' views on the state's strategic communication in agriculture. Qualitative data were collected through in-depth interviews with selected agricultural extension officers across senatorial zones. This method provided deeper insights into the lived experiences and perceptions of various stakeholders, enabling a nuanced understanding of government communication efforts. A multistage sampling technique ensured comprehensive representation from all zones and stakeholder categories within the agricultural sector. A sample size of 385 was derived using Cochran's formula, while expert-reviewed instruments ensured content validity. Reliability was confirmed through Cronbach's Alpha and standardised qualitative procedures.

The study's data collection tools included closed-ended survey questions and a semi-structured interview guide, both crafted in line with the research objectives and tested for validity and reliability. Data were analysed using SPSS for quantitative responses, applying descriptive and inferential statistics such as frequency tables, percentages, and Pearson correlation. Qualitative responses were transcribed and subjected to thematic analysis using NVivo software to extract patterns and themes from interview content. Secondary data from government documents and academic sources supported the triangulation of findings. The combination of face-to-face and digital methodologies, along with a robust sampling and analysis framework, allowed the research to produce a comprehensive and credible examination of strategic communication's impact on agricultural practices in Taraba State.

### Results and Discussion

**Table 1: Responses on Communication Approaches Utilised for Promoting Agricultural Practices in Taraba**

Response	Frequency	Percentage (%)
Strongly Agree	104	30.0%
Agree	118	34.0%
Neutral	63	18.2%
Disagree	42	12.1%
Strongly Disagree	20	5.7%
<b>Total</b>	<b>347</b>	<b>100%</b>

Source: Field Survey, 2025

The findings indicate that 64.0% of respondents positively acknowledge the use of communication approaches in promoting agricultural practices in their area, reflecting a favourable perception of the Taraba State Government's efforts in the sector. However, 18.2% remained neutral, possibly due to limited exposure or unclear understanding of these initiatives, while 17.8% expressed disagreement, suggesting disparities in the reach or effectiveness of the communication strategies. These variations point to the need for more inclusive, localised, and consistent communication efforts to ensure broader impact across all farming communities.

**Table 2: Responses on the Extent is Communication Approach Utilised to Promote Agricultural Practices**

<b>Response</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Very High	78	22.5%
High	96	27.7%
Neutral	80	23.1%
Low	60	17.3%
Very Low	33	9.5%
<b>Total</b>	<b>347</b>	<b>100%</b>

**Source: Field Survey, 2025**

The data reveals that 50.2% of respondents rated the utilisation of communication approaches for promoting agricultural practices as high or very high, affirming the Taraba State Government's visible commitment to strategic agricultural communication. However, 23.1% of respondents remained neutral, possibly due to limited exposure or lack of interest in the communication efforts. Meanwhile, 26.8% rated the utilisation as low or very low, highlighting existing communication gaps that may stem from administrative or infrastructural shortcomings. This disparity underscores the need for more consistent and widespread integration of communication strategies to ensure equal access to agricultural information across all communities in the state.

**Table 3: Responses on the Extent Strategic Communication Influence and Facilitate Agricultural Practices**

<b>Response</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Very High	92	26.5%
High	105	30.3%
Neutral	65	18.7%
Low	50	14.4%
Very Low	35	10.1%
<b>Total</b>	<b>347</b>	<b>100%</b>

**Source: Field Survey, 2025**

The data reveals that a majority of respondents (56.8%) perceive the influence of strategic communication on modifying their farming practices as either very high or high, highlighting the effectiveness of campaigns, training, and information dissemination in driving agricultural change. A neutral stance by 18.7% suggests mixed experiences or limited exposure to these interventions. Meanwhile, the combined 24.5% who rated the impact as low or very low indicates that some farmers still face challenges in accessing or benefiting from communication efforts. This result points to the need for more inclusive strategies that address linguistic, technological, or contextual barriers to ensure broader reach and effectiveness across all farming communities.

**Discussion of Findings**

The findings from the study indicate a generally positive perception and moderate utilisation of communication approaches for promoting agricultural practices in Taraba State. Specifically, 64.0% of respondents agreed that such approaches are being implemented, and 50.2% rated the extent of utilisation as either high or very high. These results reflect the Taraba State Government's visible effort in using strategic communication through mass media, awareness campaigns, and extension services to enhance agricultural development. However, the presence of a significant number of neutral (18.2% – 23.1%) and dissatisfied respondents (17.8% – 26.8%) points to inconsistency in reach and impact. This aligns with Eze (2022), who noted that agricultural communication efforts in Nigeria are often unevenly distributed, particularly in rural areas, due to infrastructural deficits and lack of tailored messaging. Yusuf (2022)

further emphasised that while governments have adopted several communication channels, poor access to digital tools and low literacy levels among farmers limit the effectiveness of such strategies.

Moreover, the perception of strategic communication as a catalyst for improving agricultural practices is supported by the fact that 56.8% of respondents affirmed its significant influence on modifying their farming behaviours. This reinforces the argument that well-planned communication interventions can serve as powerful tools for behavioural change and innovation adoption among farmers. However, the combined 24.5% who viewed this influence as low or very low indicates that gaps still exist, possibly due to linguistic mismatches, limited training, or inaccessible platforms. Ibrahim and Adeyemi (2023) and Nnaji and Ifeanyi (2023) corroborate these findings, stressing that the success of agricultural communication is contingent on its ability to reach local communities in culturally appropriate and technologically accessible ways. They advocate for decentralised and participatory communication models that foster inclusion, particularly for marginalised farming populations, thereby enhancing the overall impact of agricultural communication initiatives.

### **Conclusion**

This study demonstrates that the Taraba State Government has made appreciable efforts in employing strategic communication approaches to promote climate-smart agricultural practices, as evidenced by the generally positive perception and significant influence these efforts have had on rural farmers. However, the existence of communication gaps, limited access among certain demographics, and uneven implementation across communities highlight the need for more inclusive and context-sensitive communication strategies. Strengthening infrastructure, incorporating local languages, and ensuring consistent dissemination of relevant agricultural information are essential for maximising the impact of these initiatives and fostering sustainable agricultural development in the state.

### **Recommendations**

Based on the findings of the study, the following three recommendations are proposed:

1. Taraba State Government should improve digital infrastructure and ensure the availability of communication tools in rural areas to bridge the gap in access and ensure uniform dissemination of agricultural information across all communities.
2. Strategic communication should incorporate local languages, cultural channels, and community-based platforms to increase engagement, understanding, and participation among diverse farmer groups, especially those with low literacy levels.
3. Regular training and sensitisation programmes should be organised for both agricultural officers and farmers to improve their knowledge and effective use of communication technologies in adopting climate-smart agricultural practices.

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