

The Role of Alternative Media in Promoting Sustainable Agricultural Practices in Nigeria

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Abstract

The rapid advancement of digital technology has reshaped the media landscape and increased the relevance of alternative media for development-oriented communication, including agriculture-focused information services in Nigeria. This study explored the role of alternative media in promoting sustainable agricultural practices, with particular attention to how these channels support awareness, learning and practice adoption among farmers and other agricultural stakeholders. The study adopted an exploratory qualitative research design and drew evidence from Focus Group Discussions and Key Informant Interviews conducted in Kogi State, with data analysed using thematic analysis. The findings indicated that alternative media channels such as community radio, mobile applications and social media platforms (notably WhatsApp and Facebook) supported delivery of localised and timely agricultural information, strengthened interaction and enabled rapid responses to emerging farming problems. However, the study also found that limited internet access, low digital literacy, technology constraints and concerns about content credibility limited reach and created vulnerabilities to inaccurate information shared via digital platforms. Overall, the study affirmed that alternative media can complement extension communication by broadening access and supporting participatory information exchange, while highlighting the need to address structural and credibility barriers for sustainable impact.

Keywords: Digital Technology, Media, Agriculture, Agricultural Practice, Food Security, Sustainability.

Introduction

Historically, agriculture has been the cornerstone of Nigeria's economy and a principal source of revenue from the post-independence period until the commercial discovery of crude oil in Oloibiri. Research conducted by Nwankwo, Ikehi, Ejiofor and Ifeanyieze (2024) indicates that Nigeria's status as a leading exporter and provider of agricultural products has significantly diminished due to the sector's progressive neglect following the discovery of crude oil in the 1950s. During the 1950s, Nigeria was a prominent global producer of groundnuts, cotton, cocoa and palm oil, underscoring its prominence as a major agro-economy at that time (Udegbumam & Mojeed, 2022).

The significance of agriculture to society and human welfare is profound and multifaceted, given its roles in food security, economic development and livelihoods across value chains (Nwankwo et al., 2024). Despite these contributions, agriculture-related development outcomes remain shaped by persistent challenges that constrain innovation diffusion and farmer support, including limitations in advisory systems and information reach in many rural settings (Mwangi & Kariuki, 2015; Malesse, 2018).

In the context of agricultural development, communication is pivotal in sustaining effective practices and facilitating the adoption of innovations within agricultural systems. Effective communication enhances learning and interaction among stakeholders within the

innovation system, thereby supporting innovation diffusion and uptake of improved practices (Olaitan, Shuaib, Owojaiye, Olatilewa, & Babatunde, 2020). One area of communication that requires scholarly attention as regards sustainable agricultural development is the adoption of alternative media. Against this communication imperative, alternative media such as community radio, interactive platforms and social media-enabled farmer forums have become increasingly visible in agriculture-related information environments, particularly where conventional channels are constrained by cost, reach, literacy barriers, or lack of dialogic engagement.

Although prior studies have examined community radio and agricultural extension, there remains limited empirical evidence that directly examines how alternative media platforms function as participatory tools for sustainable agriculture, especially within specific subnational contexts where infrastructure, language and local communication ecologies shape media utility. This study therefore focused on Kogi State, where communities were purposively selected based on their agricultural activities and exposure to alternative media, offering a context to examine how localised media platforms may complement information and advisory gaps in practice.

Problem statement

Agricultural advancement in Nigeria and across sub-Saharan Africa is undermined by a well-documented gap between farmers and the advisory systems intended to support them. The shortage of extension agents to farmers documented at approximately 1 agent per 4,000 farmers in Nigeria makes it very impossible to reach all farm families through interpersonal means alone, pushing agricultural organisations to seek media-based alternatives for information dissemination. According to Ifejika et al. (2019), the north central zone is challenged by insufficient field extension agents, where the four Agricultural Development Programmes studied served 1.412 million farm families with inadequate staffing, while simultaneously revealing that existing ADP communication strategies relied predominantly on costly legacy media (radio and television) at low projected reach.

Beyond staffing constraints, the communication channels available to smallholder farmers have historically been characterised by one-way top-down information flows that limit participation and local relevance. Studies in the African context have shown that agricultural information systems that fail to enable dialogue or respond to localised farming conditions have limited uptake outcomes, because farmers' adoption decisions depend not only on information access but on trust, cultural resonance and perceived relevance (Mwangi & Kariuki, 2015; Malesse, 2018). Community radio and mobile-enabled platforms have emerged as candidates for bridging this gap, but the evidence on their effectiveness particularly for promoting sustainable agricultural practices rather than general information access remains uneven.

Sanusi et al. (2025) confirmed that community radio has proven positive impact on agricultural development in Southwest Nigeria, while Okafor and Malizu (2013) found that 73% of Nigerian farmers used mobile phones for agricultural information exchange, with extension workers reporting improved coverage; yet neither study addresses how these platforms function in the specific context of promoting sustainable practice adoption, nor do they examine subnational settings such as Kogi State, where local communication ecologies, language diversity and infrastructural conditions shape media utility differently. These overlapping deficits in reach, participation and credibility of agricultural communication systems make it necessary to examine empirically how alternative media platforms function in specific community settings and to identify both the conditions under which they extend effective advisory support and the barriers that limit their utility for sustainable agricultural outcomes.

Aim and objectives of the study

The aim of this study is to explore the role of alternative media in promoting sustainable agricultural practices in Nigeria. The study pursued three objectives: first, to identify the types of alternative media utilised by farmers and agricultural stakeholders; second, to assess the effectiveness of alternative media in disseminating information and encouraging adoption of sustainable agricultural practices; and third, to identify the challenges and opportunities associated with the use of alternative media in promoting sustainable agricultural practices in Nigerian communities.

Literature review

Conceptual review

Three concepts underpin this study and require conceptual understanding: alternative media, sustainable agricultural practices and participatory communication. Alternative Media. Although the concept of alternative media has no generally agreed definition, scholars have deliberated its boundaries for decades. The most influential conceptual frameworks define alternative media relationally, that is, in terms of how such media position themselves against mainstream or dominant media rather than through fixed formal features. Holt, Figenschou and Frischlich (2019), in a widely cited conceptual review, propose a multilevel relational definition in which alternative news media “position themselves as correctives of the mainstream news media, as expressed in editorial agendas or statements and/or are perceived as such by their audiences or third-parties.”

This counter-hegemonic orientation may manifest at the level of societal function, organisational structure, or content. Sandoval (2009) offers a corresponding ideal-type model, characterising alternative media as non-commercial, participatory and critical noting that under structural constraints, most platforms satisfy some but not all of these dimensions. Rauch (2016) extends this by arguing that in contemporary converged media environments, the alternative-media distinction is better understood, as “less commercial, producing more critical content and being more committed to social change than their mainstream counterparts.” For the purposes of this study, alternative media refers to communication platforms that operate outside the dominant commercial and state broadcasting structures, prioritise community access and participatory exchange and serve local rather than mass-market audiences. In the Nigerian agricultural context, this includes community radio stations, WhatsApp groups, participatory videos, mobile SMS platforms and NGO-produced digital content.

For Sustainable Agricultural Practices (SAPs), they are those that enable farmers to meet current and future needs for food, fibre and ecosystem services while preserving environmental resources and economic viability across generations. A comprehensive review by Sithole and Olorunfemi (2024) covering the literature from 2000 to 2024 identifies crop rotation, intercropping, improved seed varieties, manure application and mulching as among the most widely adopted SAPs in sub-Saharan Africa, while conservation tillage, agroforestry and water harvesting remain underutilised. Their review situates adoption challenges squarely in information and knowledge constraints alongside structural barriers such as land tenure insecurity and financial exclusion. Makate, Makate and Mango (2017) provide complementary evidence from southern Africa showing that the uptake of SAPs significantly improves productivity, crop income and food adequacy when access to social capital and relevant knowledge is enhanced. These findings frame sustainable agricultural practices not merely as technical interventions but as socially situated adoption processes in which communication access to relevant, trusted and actionable information is a decisive enabling factor.

From a Participatory Communication position, the concept repositions the communication process from a linear, top-down model to one in which communities are active producers, not passive recipients, of development-relevant knowledge. Its theoretical roots lie in the communication for development tradition of the 1970s and 1980s and it gained renewed salience in the 1990s as donor agencies and development institutions increasingly recognised the limitations of one-way extension models. Coldevin (2001) traces the evolution of participatory communication approaches in rural development contexts, noting that “participatory methods were refined to bring in the views of the intended beneficiaries from the start in designing project goals and selecting appropriate communication and adult learning approaches.” Community media have been identified as privileged vehicles for participatory communication in development practice. Saez (2013), reviewing the field, characterises community media by “the centrality of citizenship participation in the creation of widespread messages and in the processes of social change that they promote.” In the agricultural context, participatory communication supports not only information transfer but sense-making, local knowledge validation and adoption readiness all conditions that conventional extension systems have historically struggled to meet at scale.

Empirical review

The empirical literature on alternative media and agricultural development in Nigeria and sub-Saharan Africa spans several platform types and methodological approaches, though studies with a specific focus on sustainable practice adoption as distinct from general agricultural information access remain comparatively thin.

On community radio, Sanusi, Morenikeji and Adekilekun (2025) conducted a survey of 100 farmers in Southwest Nigeria and found that agricultural programmes on community radio enhanced farmers’ knowledge of modern techniques, contributed to higher yields and improved decision-making, with a significant majority of respondents citing radio as a critical medium. The study noted persistent barriers including poor signal quality, limited access to affordable devices and inadequate agricultural content, which are findings directly relevant to the constraints documented in the present Kogi State study. Alhassan (2019) similarly found, through a survey of 250 respondents in Kaduna State, that community radio contributed substantially to the adoption of modern farming methods and reduction in farming expenditure, recommending that programmes be extended in local languages to support grassroots development. At the national level, Yahaya and Badiru (2002) documented that the ratio of extension agents to farmers (1:4,000) made radio an essential and positively-perceived substitute for interpersonal extension in Southwest Nigeria, findings that remain structurally applicable today.

On mobile phones and digital platforms, Okafor and Malizu (2013) examined 50 farmers, 15 extension workers and 40 farm produce sellers in Nigeria using focus group discussions and semi-structured interviews, with finding that 73% of farmers used mobile phones for agricultural information search and exchange and that 65% of extension workers reported increased effectiveness and coverage through mobile phone use. Jaji, Abanigbe and Abass (2018) specifically studied female agricultural practitioners in Lagos State and found that 90.8% considered mobile phones an efficient and effective extension communication tool, while identifying cost of subscription and device access as major constraints. These findings anticipate the access-related barriers observed in the present study. Nkwain and Fatty (2019) reviewed radio, newspapers and mobile phones as extension tools across African settings and recommended the establishment of WhatsApp groups for farmers and government partnerships with mobile communication companies for agricultural SMS updates, a model aligned with the participatory platforms documented in this study’s findings.

On social media, specifically in North Central Nigeria, Ifejika et al. (2019) analysed four Agricultural Development Programmes in the North Central Zone, including Kogi State and found zero formal integration of social media (Facebook, WhatsApp and YouTube) into ADP communication strategies despite documented inadequacy in field extension staffing. They recommended mainstreaming these platforms to overcome field manpower shortages. This institutional gap in formal adoption of social media for extension identified for Kogi State specifically contextualises this study's evidence of informal, community-driven alternative media use filling a void that formal extension systems have yet to address.

On technology adoption barriers, Salisu, Danwanka and Hassan (2024) examined radio and mobile phone use among crop farmers in Bauchi State and found that digital skills constraints and lack of awareness were the first- and second-ranked challenges in accessing agricultural information through these platforms, while years of farming experience was a significant positive predictor of adoption. This evidence of disparity access by age and experience supports the present study's finding that digital platforms disproportionately bypass older, more experienced farmers. Malesse (2018) and Mwangi and Kariuki (2015) provide contextual evidence that communication barriers are among the primary factors limiting agricultural technology adoption across smallholder farming systems in developing countries a finding the present study's Kogi State data corroborates through qualitative accounts.

Taken together, the empirical literature confirms that alternative media platforms, when accessible and locally relevant, can meaningfully expand agricultural information reach and support practice adoption. However, most existing studies examine general agricultural information dissemination rather than specifically sustainable practice adoption; most focus on single platform types rather than the mixed media ecologies documented here; and none combines an examination of community radio, WhatsApp, mobile SMS and participatory video within the specific Kogi State context. The present study addresses these gaps directly.

Theoretical Framework

The study adopts the Participatory Communication Theory as its theoretical framework. The theory frames communication as a process that can empower communities to participate actively in their own development, rather than positioning audiences as passive recipients of one-way messages. Within agricultural development contexts, this approach emphasises inclusion and empowerment, which are particularly important because farmers and local communities are the primary stakeholders in the adoption and adaptation of farming practices. In the context of this study, alternative media channels such as WhatsApp groups and community radio provide platforms for dialogue, experience sharing and locally situated sense-making, which can contribute to ownership and relevance of sustainable agricultural practices.

Consistent with this framing, the study examined alternative media not only as channels for disseminating information, but also as spaces that can support two-way interaction and community-level knowledge exchange around farming challenges and responses. This theoretical orientation aligns with the study's objectives, which focus on identifying the platforms used, assessing their effectiveness for dissemination and adoption and examining the constraints and opportunities that shape participatory communication in practice.

Methodology

This study employed an exploratory qualitative research design and used Focus Group Discussions and Key Informant Interviews to generate in-depth accounts of experiences and perceptions regarding alternative media and sustainable agriculture in Kogi State. The research was conducted in three purposively selected communities in the state: Kabba, Ankpa and

Okene. These communities were selected based on their agricultural activities and exposure to alternative media. In addition, the study conducted twelve Key Informant Interviews, engaging community leaders and other relevant stakeholders with recognized roles in community and agricultural affairs. The qualitative orientation supported the study's goal of examining the types of alternative media used, how these platforms enabled information flow and learning and how constraints such as access barriers and content credibility concern shaped adoption processes and outcomes in practice.

Data Analysis

Data were analysed using thematic analysis in order to identify patterned meanings in participants' accounts about alternative media use, perceived effectiveness and constraints affecting adoption of sustainable agricultural practices. This analytic approach supported synthesis across the focus group and interview data to interpret how different platforms such as community radio and WhatsApp-enabled exchanges functioned as mechanisms for information access, interaction and decision support in farming contexts. Data from FGDs and KIIs were audio-recorded with participants' consent, transcribed verbatim and analysed using Braun and Clarke's (2006) six-phase thematic analysis framework. The analysis proceeded through the following stages: (1) familiarisation with data through repeated reading of transcripts; (2) generation of initial codes from recurring patterns; (3) collation of codes into potential themes; (4) review of themes against coded extracts and the full dataset; (5) definition and naming of themes; and (6) production of the final analytical narrative. Coding was conducted manually. Themes were organised according to the three research objectives.

Ethical consideration

The study involved human participants through focus group discussions and key informant interviews, which requires attention to ethical practice in the conduct and reporting of qualitative research. Given the study's use of community-level discussions and stakeholder interviews, the research context underscores the importance of safeguarding participants while generating credible insights on communication, media use and agricultural practice adoption in local communities.

Discussion of Findings

The findings indicate that alternative media played a significant role in promoting sustainable agricultural practices in the selected communities in Kogi State by expanding access to localised information and supporting interaction around farming challenges and decisions. At the same time, the findings showed that the benefits of alternative media were shaped by differential access to digital infrastructure and skills and by concerns about credibility and accuracy on certain platforms, especially in relation to WhatsApp-mediated information flows. The findings are organised according to the three research objectives.

Alternative Media utilised by Farmers and Agricultural Stakeholders

The study revealed that multiple forms of alternative media are actively utilised by farmers and agricultural stakeholders for agricultural communication, including community radio, mobile applications and social media platforms such as WhatsApp and Facebook across the three communities of Kabba, Ankpa and Okene. Community radio emerged as particularly important in rural settings where access to the internet and literacy levels are limited, because it provides information in local languages and remains accessible to farmers who may not benefit from text-heavy or internet-dependent channels. This reliance on vernacular broadcasting is illustrated by the participant excerpt, as observed by one farmer in Ankpa

during a focus group discussion: “Radio is our teacher during planting season. When they speak in Igala, we understand everything about when to plant and how to deal with pests” (FGD, Ankpa, Participant 3).

While radio served as a foundational platform for localised communication, the broader findings also indicated that social media and mobile-enabled communication were part of the alternative media ecosystem through which farmers and stakeholders accessed information and exchanged experiences, especially via WhatsApp and Facebook in contexts where these platforms were available and usable. WhatsApp groups were identified as the second most prominent alternative media channel, particularly among younger and semi-urban farmers who use the platform to share photographs of crop conditions, discuss market prices and exchange advice on pest management. A key informant in Kabba noted: “The WhatsApp group for farmers in this area has over 200 members. Farmers post pictures of their crops when they see disease and others respond with advice” (KII, Kabba, Agricultural Extension Officer). Mobile phone SMS alerts and participatory videos were also mentioned, though less frequently. SMS alerts were valued for their simplicity and accessibility even on basic phones, while participatory videos typically produced by NGOs and shared at community gatherings were praised for demonstrating sustainable techniques in relatable, local settings.

Taken together, the pattern suggests that alternative media use combined low-tech, language-accessible formats (such as community radio) with more interactive digital formats, creating a mixed communication environment with varying degrees of inclusiveness and immediacy. These findings are consistent with Nwankwo et al. (2024), who underscored the importance of accessible and tailored communication tools in agriculture and with Sanusi et al. (2025), who documented the impact of community radio on agricultural development in Southwest Nigeria. Additionally, Mwangi & Kariuki (2015) recognize the gap in advisory services, which community radio and alternative media could effectively fill.

Effectiveness of Alternative Media in Disseminating and Encouraging Adoption

Findings reveal that alternative media platforms are effective in enhancing both the dissemination and adoption of sustainable farming techniques, though their effectiveness varies by platform and context. Community radio was consistently rated as the most effective channel due to its broad reach, cultural resonance and capacity for interactive programming. Several participants described how radio call-in programmes allowed them to ask questions directly to agricultural experts, creating a two-way communication dynamic that aligns with the participatory communication framework. WhatsApp groups facilitated a different kind of effectiveness: rapid, peer-driven problem-solving. A farmer in Okene explained: “When my tomatoes started rotting, I took a photo and sent it to the group. Within one hour, three people had told me it was blight and what to spray” (FGD, Okene, Participant 6). This immediacy and collaborative dynamic fostered trust and accelerated decision-making.

Participatory videos were particularly effective in encouraging adoption of new techniques. Participants noted that seeing a fellow farmer demonstrate a practice (rather than hearing an expert describe it) made them more willing to try it. A community leader in Ankpa stated: “When farmers see someone like them doing something on video, they believe it more than when someone from the city tells them what to do” (KII, Ankpa, Traditional Leader). However, the effectiveness of alternative media was not uniform across communities. In Okene, where internet connectivity was relatively better, WhatsApp and mobile applications played a more prominent role, whereas in Ankpa, community radio dominated. These differences underscore the importance of context-specific media strategies, a point reinforced

by Olaitan et al. (2020) regarding the importance of interactive and locally relevant information dissemination.

However, the study's evidence also indicated that effectiveness is not uniform across platforms because it depends on access, skills and credibility conditions that shape whether farmers can use the platforms consistently and whether they trust the information circulated through them. This suggests that the effectiveness of alternative media is best understood as a combination of communicative affordances (timeliness, interactivity, localization) and the structural conditions (connectivity, literacy, device access) that enable or constrain use in practice. According to Olaitan et al. (2020), the effectiveness of communication platforms like social media and community radio in agricultural development is well-documented, reinforcing the study's findings on the importance of interactive and locally relevant information dissemination.

Challenges and Opportunities Associated with Alternative Media Use

The study identified several challenges affecting alternative media use for promoting sustainable agricultural practices, including digital literacy constraints, limited access to technology and concerns about content credibility across platforms. Limited access to technology and poor internet connectivity in rural areas were identified as key barriers that hinder the adoption and consistent use of online platforms for agricultural advisory purposes. In Ankpa, several FGD participants reported that they could only access WhatsApp when they travelled to nearby towns. This finding echoes the broader digital divide documented by Malesse (2018) and Mwangi and Kariuki (2015) as impediments to agricultural innovation diffusion. Older farmers, in particular, reported difficulty using smartphones and navigating mobile applications. A key informant in Okene observed: "Many of our experienced farmers (the ones with the most knowledge) cannot use these phones properly. So, the technology passes them by" (KII, Okene, NGO Representative). This suggests that digital literacy interventions must be targeted and age-sensitive.

In addition, the evidence indicated that the occasional dissemination of inaccurate information through platforms such as WhatsApp limits the full potential of alternative media, particularly when speed of information circulation outpaces verification practices. This was a recurring concern across all three communities; the spread of inaccurate agricultural information through WhatsApp. Participants described instances of unverified advice on pesticide use and crop management that had led to crop losses. Oladeji (2025) highlights this challenge in the context of climate-smart agriculture, noting that information disorder undermines extension services and rural development. This finding underscores the need for fact-checking mechanisms and official verification channels.

Community radio and participatory videos represent low-tech, high-impact solutions that do not depend on internet access and can therefore reach the most marginalised farming communities. The collaborative learning environment fostered by WhatsApp groups, despite its risks, represents a significant opportunity for peer-to-peer knowledge transfer. The integration of alternative media into formal agricultural extension services creating a hybrid model was identified by key informants as a promising avenue for expanding reach and impact. This aligns with Izuchukwu et al. (2023), who demonstrated the positive impact of farmer-to-farmer communication networks on the adoption of sustainable practices. Udegbumam and Mojeed (2022) highlight that despite Nigeria's previous dominance in agriculture, challenges such as poor dissemination of agricultural innovations persist. Additionally, Malesse (2018) stresses that the sector's growth is impeded by communication barriers, which alternative media could help overcome. This balance of opportunity and constraint reinforces the need to

consider both platform capabilities and local communication ecologies when designing media-supported strategies for sustainable agriculture.

Conclusion

This study found that alternative media particularly community radio, mobile applications and social media platforms such as WhatsApp and Facebook supported dissemination of localised and timely agricultural information and contributed to awareness and adoption of sustainable agricultural practices in selected Kogi State communities. The findings also showed that the value of alternative media is strengthened where platforms enable interaction and rapid responses to emergent farming issues, but constrained where connectivity, digital literacy and technology access remain limited.

From a participatory communication perspective, the findings underscore the importance of communication approaches that enable inclusion and empowerment, positioning farmers and communities as active stakeholders in knowledge exchange around agricultural practices. Policy and practice implications therefore include strengthening platforms that improve access and localization (notably community radio) while addressing credibility risks and access barriers that reduce the effectiveness of mobile and social platforms for agricultural advisories.

Recommendations

The study's findings support targeted recommendations aimed at strengthening inclusive, credible and scalable alternative media support for sustainable agriculture, particularly where rural communities face advisory and communication gaps. First, community radio should be strengthened through resourcing that supports accurate, localised and timely agricultural information in local languages, given radio's importance in contexts of limited literacy and limited internet access. Second, interventions should address limited technology access and poor connectivity that hinder adoption of online platforms, because these constraints restrict farmers' ability to benefit from mobile applications and social media-enabled information services.

Third, stakeholders should respond to the problem of occasional inaccurate information dissemination on platforms such as WhatsApp by strengthening credibility practices and ensuring that verified agricultural guidance is available through trusted channels to reduce misinformation-related harm to farming decisions. Fourth, practical programming should continue to leverage the real-time interaction capabilities of platforms that support rapid problem-solving for farmers, especially for urgent issues related to pests and weather variability. Fifth, agricultural communication strategies should be designed as blended systems in which radio and digital platforms complement each other, allowing low-tech inclusion and high-interactivity support to operate together depending on local constraints and opportunities.

Future Research Direction

The findings carry implications for future research on alternative media and sustainable agricultural practices, particularly regarding the durability, inclusiveness and credibility of media-supported advisory systems over time. Future studies should build on this evidence by examining how alternative media systems can sustain engagement and credible information flow in contexts where connectivity and digital literacy constraints persist and where risks of inaccurate information remain present on fast-moving platforms. In addition, future research should further investigate community-level dynamics of information exchange and trust within

alternative media environments, especially given the study's evidence on both the benefits of real-time interaction and the constraints related to credibility and access.

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