

ISSN: 2790-9522 (Print) | 2790-9530 (Online)

Website: <https://journals.jozacpublishers.com/ajbcps/index> <https://doi.org/10.5281/zenodo.15633031>

## Agricultural extension services and food security in Mangu, Quanpan and Bokkos Local Government Areas of Plateau State, Nigeria

Bernard Diesuk Lucas<sup>1\*</sup> <sup>1</sup>Department of Mass Communication, Plateau State University, Bokkos, Nigeria (Post Graduate Student, Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria. A Public Commentator), [bernardlucas2017@gmail.com](mailto:bernardlucas2017@gmail.com)\*Correspondence: [bernardlucas2017@gmail.com](mailto:bernardlucas2017@gmail.com)

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**Received:** March 07, 2025 | **Accepted:** May 05, 2025 | **Published:** June 10, 2025

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### Abstract

The study set out to investigate agricultural extension services and food security in Mangu, Quanpan and Bokkos Local Government Areas of Plateau State, Nigeria. Adopting the mixed methods research strategy, the study employed the purposive sampling technique, used questionnaire and Key Informant Interview as instruments of data collection. The sample population of the study was 30 for KII and 381 for the quantitative aspect of the study. Further, the research used Modernisation theory as its theoretical framework. Findings show that agricultural extension services in the three local governments studied have been ineffective. This is as a result of number of challenges, which include weak monitoring and evaluation mechanism, corruption and lack of effective research and development. Others are decaying infrastructure and facilities such as storage facilities, light, roads, poor transport system, low level of education among farmers, lack of effective policy and strategic planning implementation among others. The researcher recommends that the Plateau state government and local governments should strengthen funding for better promotion of agricultural extension services. There is need to also address infrastructure deficits such as transportation, improve the digital knowledge of the farmers among others.

**Keywords:** Agriculture, Bokkos Local Government Areas, Extension services, Food security, Nigeria

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### 1. Introduction

Globally, agricultural extension services are generally seen as a veritable initiative for increase in food production. In other words, agricultural extension services are important because they serve as the foundation in the transformation process of agricultural-related matters. This innovation according to Food and Agriculture Organisation (FAO, 2019), emerged with the intension of reaching farmers with new agricultural cultivation methods. The FAO (2019) defines agricultural extension services as a network of educational programmes aimed at bridging the gap between agricultural research and farmers' practical needs. Agricultural extension services, according to

Dhyani (2022), are set of services carried out by skilled workers or agents that help farmers increase their agricultural produce. Furthermore, according to Bonye, Alfred and Jasaw (2012), agricultural extension services refers to a system of providing information, education, and support to farmers and agricultural stakeholders, with the aim of improving agricultural practices, productivity, and overall rural development.

In the United States, extension services began in the 1860's (Malabe, Wakawa & Gwary, 2019). This was expanded through researches in 1887 and 1890's respectively (Malabe, Wakawa & Gwary, 2019). Furthermore, the Cooperative Extension Service was enacted in 1862 (Ohio Agricultural Research and Development Centre, 2024). The three tiers of government usually achieve this extension programmes and policies through partnership. The aim of the extension programme as obtainable world-wide is to deepen the knowledge of farmers on how to cultivate different crops and rear animals. (Ohio Agricultural Research and Development Centre, 2024). Since then, this agricultural initiative has contributed in educating farmers, serves as research hub, thereby contributing significant to food and other agricultural sustainability in the US. A statistics by the United States Department of Agriculture (USDA), indicates that in 2023, the agricultural sector contributed 5.6 per cent of the Gross Domestic Product (GDP), accounting for \$1.530 trillion. This is attributed to the role that agricultural extension services have been playing.

The situation has been the same in Ethiopia. The Ethiopian Ministry of Agriculture through its Agricultural Transformation Agency (ATA) has continued to enlighten and educate the farming population through its extension service programmes (Girma, 2017). The role of extension services has led to a momentous boost in Ethiopia's agricultural output, especially in the last decade with an average extension worker-farmer ratio of 1:475, which is higher than the UN recommended average of 1:800 (Ethiopian Institute for Agricultural Research (EIAR, 2017). For instance, the amount of chemical fertilisers used by farmers increased from about 150,000 MT to 1.16 million MT between 2005 and 2016. Similarly, the amount of improved seeds used increased from about 33.3 MT to 130,000 MT during the same period. Productivity per hectare of land has also increased from 0.65 MT to 1.8 MT per hectare within the same period (Girma, 2017).

Agriculture is crucial to Nigeria's economy as large number of the country's population depends on agriculture as a source of livelihood. For instance, in 2023, according to National Bureau of Statistics (NBS), the agricultural sector contributed 26.53% to nominal Gross Domestic Product (GDP) in the third quarter of 2023 (Ekugbe, 2024). This could be one of the reasons the country has continued to formulate laws and policies on agricultural extension services.

The recognisable agricultural extension practice in Nigeria started in 1893 (Madueke & Anyanwu, 2000). Since then, agricultural extension has come to stay with the priority giving to it by subsequent administrations from independence to date. National agricultural extension services in Nigeria, provided by institutions like the Federal Ministry of Agriculture and Rural Development (FMARD) and state-level agencies are designed to enhance agricultural practices, disseminate knowledge and boost productivity among farmers. These services are crucial for Nigeria's food security efforts, especially given the challenges posed by a growing population and changing climate patterns that impact agricultural production (FMARD, 2021).

National agricultural extension services in Nigeria have played key roles such educating and training farmers on global best practices, technological transfer, advisory services, input supply,

market linkages, research and development as well as capacity building. However, there have been challenges such as insufficient funding, inadequate infrastructure, poor farmer-extension agent ratio, which in Nigeria is 1:5000 and 1:10000 (which is below global standard of 1:1000 to 1:500). Others are insufficient training, and limited access to new communication technologies (Okoye, Abimbola & Oni, 2020).

The current food security in Nigeria still calls for concern. According to data, in January 2024, the country's food inflation stood at 35.41 per cent, resulting in 1000 million Nigerians facing food insecurity with 18.6 million facing acute hunger (World Food Programme, 2024). Food importation in Nigeria has been of significant concern, as information in 2022 revealed that the country imported about 1.9 Trillion Naira food (African Development Bank Group, 2024).

Though efforts have been made through the extension services by the Federal, State and Local Governments of Nigeria to transfer technologies to farmers to enhance agricultural production but these efforts have not been much fruitful. Some of these government agricultural extension policies and programmes include National Agricultural Innovation Policy (NATIP), the Federal Department of Agricultural Extension Services (FDAE), Anchor Borrowers Programme, the Growth Enhancement Support Scheme (GES), among others. However, these policies and programmes have not yielded the desired impact, as current knowledge about global best farming practices remain low in Nigeria, leading to food importation of about 1.9 trillion naira in 2022 (African Development Bank Group, 2024). For instance, Olajide et al. (2018) claims that large part of Nigeria's agricultural lands remains unused.

In Plateau State, the state government established the Ministry of Agriculture under which the agricultural extension services unit operates to empower farmers with a view to boosting food production in the state. However, due to challenges such as inadequate funding, limited access to technology and information, and infrastructure deficiencies and insufficient extension agents, the aim of setting up agricultural extension services seem not to be fully achieved in Plateau State. Observations by the researcher have shown that a number of farmers in Plateau State do not have sufficient knowledge of modern agricultural technologies and relevant information which significantly affects their production and enhanced food security. This could be attributed to ineffective agricultural extension services. Therefore, it is the concern of this study to ascertain this observation, as it assesses the impact and challenges of agricultural extension services and food security in Plateau State, concentrating on Bokkos, Bassa and Quanpan Local Government Areas.

## **2. Objectives of the study**

- a. To ascertain the level of awareness of agricultural extension service policies and programmes of Plateau State government among the respondents.
- b. To find out the channels through which the respondents get information on agricultural extension services
- c. To examine the effectiveness of the extension service programmes and policies.
- d. To identify the challenges associated with extension services and food security in among the respondents.

### **3. Literature review**

#### **3.1. *Nexus between agricultural extension services and food security***

This section reviewed works on agricultural extension services from global to regional and country perspectives. A study by North American Agricultural Advisory Network (NAAAN), 2022) on feeding North America through agricultural extension, adopted the document search approach. Purposive sampling method was used to study 394 publications about agricultural extension in the region. Findings of the study revealed that agricultural extension services in Canada is impactful on farmers as it has created awareness on various methods of planting, caring, harvesting and storage of farm produce. This is achieved through constant capacity building and adequate funding of agricultural extension workers. In United States of America, the study established sources for agricultural extension services funding to federal, state, county, and the private sector. The research found that grants were the major sources of funding for agricultural extension services. Nevertheless, the finding further showed that the grants, which largely comes from the Federal government has significant decline d recently.

From the study by NAAAN (2022) showed that in Mexico, efficiently, sufficient, nutritious, safe and affordable food can only be possible through intensified efforts in expanding the scope of agricultural extension services. The study also found that the Mexican agricultural development is challenged by climate change and poor soil management. The study recommended that it was important to have a an understand the way the ecosystems North American work. This will assist to know the best method to use to promote agricultural extension programmes in the region.

In a study by Kalogiannidis and Syndoukas (2024) analysed the extent to which agricultural extension programmes and services have been having on farm output, looking at this issues from the world perspective. The study utilised the survey research design to collect data from 382 participants. Descriptive statistics were adopted for the analysis of data. The study found that agricultural workshops and training affect farm productivity, those with access to government demonstration had better agricultural practice, and media-based agricultural programmes had positive impact on farming output. The study concluded that extension services as they relate to agriculture are viable options for the increment of food across the globe. The study, therefore recommended the need to strengthen farmers' organisation and last-mile agricultural input providers. The farmers should also have access to knowledge concerning how to market their produce and other support services that are essential for agricultural growth, as this will ensure food security globally.

Kumar (2020) examined the impact of agricultural extension services to tackle food shortages. The research was conducted in India. The research strategy employed was the survey. The study selected 296 respondents through the simple random sampling technique. The study found that food security in India remains a major challenge due to low utilisation policy and programmes regarding of agricultural extension activities. The study concluded that extension services in India were under-utilised. The study recommended the need for the Indian government to strengthen it agricultural extension services through strong legislation. The study also advocated for a Board that will ensure the monitoring of agricultural extension service policies and programmes with a view to making sure that the countr become food sufficient.

Fiaz, Noor and Aldosri (2018) conducted a review on the effect of extension services on food security. The study was carried out in Kingdom of Saudi Arabia: potential role of agricultural extension. The review adopted the content search technique. It found that agricultural extension services in the Kingdom were being used to promote traditional crops planting, hydroponics, greenhouse farming, seawater harvesting and rainwater harvesting. The review concluded that agricultural extension was helping in building the capacity of farmers and leading to better yields. The researchers recommended regular feedback from the country's extension department to government, as this will assist policymakers to plan agricultural policies for the Kingdom accordingly.

Furthermore, Sebagala and Matovo (2020) assessed the nature and impact of agricultural extension in Uganda. The study used the comprehensive baseline survey data collection approach. The study established that despite the farmers having access to extension services, their productivity level was not commensurate with their knowledge of extension services. It was therefore, advocated that government and its relevant agencies should continue to deepen the knowledge of the farmers concerning agricultural extension services.

Dia and Kobani (2024) explored the effects agricultural extension system in addressing food challenges. The research was conducted in Akuku-Toru Local Government Area of Rivers State. Survey method was employed. The random sampling technique was applied to collect data from 494. The results of the research revealed that agricultural extension system was playing key role in educating the farmers on where, how and when to access farming grants and loans, though with some challenges when trying to access these farming services. Conclusion was therefore drawn that agricultural extension programmes was having positive impact on farmers in Akuku-Toru Local Government Area of Rivers State. The researchers therefore suggested to government at all levels in the state and other development partner organisations to help in making access to the loans and grants easy.

In the same vein, Fadlullah and Adiyu (2020) evaluated the efficacy of agricultural extension programmes on rice production. The researchers collected data for the study from rice farmers in Soba Local Government Area, Kaduna State, Nigeria through the structured interviews design. The stud's result indicated the challenges to effective agricultural extension services to include lack of knowledge from the farmers, poor transportation facilities to enable extension workers carry out their assignments effectively and delay in the supply of new farming inputs. It was concluded that despite many constraints the respondents perceived AES as effective. The study recommended that input agencies should ensure adequate and timely supply of quality inputs to farmers and sensitisation on new farming methods.

## **4. Theoretical underpinning**

### **4.1. Modernisation Theory**

The Modernisation Theory emerged in the 1950s and 1960s. It was developed by Walt Rostow, David McClelland and Neil Smelser. It is a theory of social continuity and transformation which results in change. The concept of modernisation incorporates the full spectrum of the evolution and radical change that a developing society or country passes through in order for such a society to be at the same level with advanced societies or nations (Hussain et al., 1981). The idea behind the

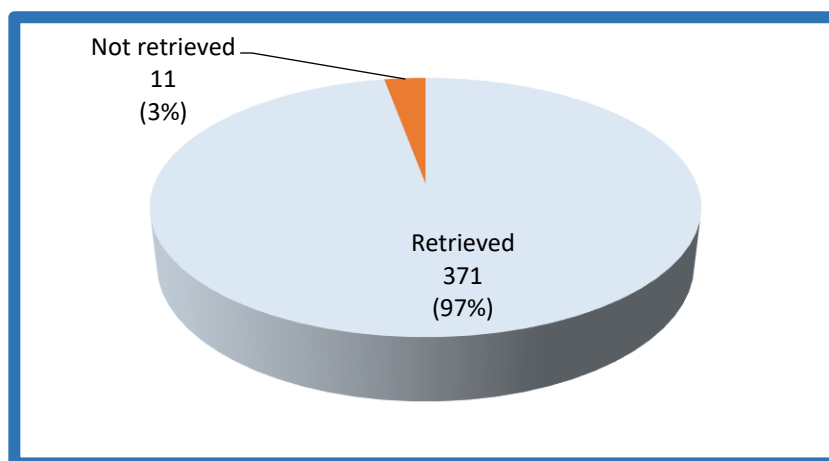
modernisation theory is for developing countries, which Nigeria falls into to copy what the developed societies like England, United States of America, France, among others are doing. The theory states that in trying to be a modern society, your policies and programmes must be deliberate towards increasing and raising the knowledge base of our citizens. This is achieved through dissemination of new information and production methods.

Relating it to agriculture, Ellis and Biggs (2001) cited in Chipo and Nyoni (2020), modernisation theory has to do with providing and motivating farmers to key into modern agricultural techniques of production. The farmers are to try new crop and animal production methods, as well and novel was of marketing farm produce. The concept of this theory is thus to educate farmers through extension services to accept new technology of food production. The farmers are enlightened to embrace new hybrids, use of modern farming soil tillage like tractors. This is done with a view to replacing the traditional ways of farming, thus leading to increase in food production. Smith (1973) and Coetzee et al. (2007) corroborate that modernisation theory suggests the teaching of farmers with newer agricultural technologies so that they can discard their old methods of practices.

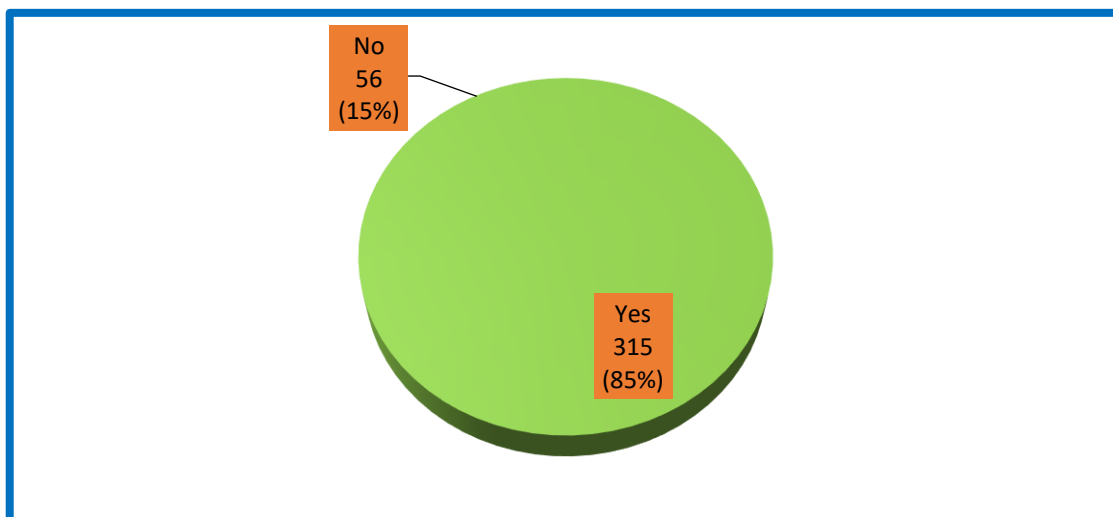
From the foregoing, modernisation theory suggests that the adoption of modern agricultural practices and technology, facilitated by agricultural extension services, can lead to increased agricultural productivity and food security. The theory is applicable because it provides a framework for understanding how agricultural extension systems are important in advancing and promoting modern agricultural practices, hence it is found suitable in this study.

## 5. Data presentation

A total of 381 copies of questionnaire were administered out of which 371 were retrieved, representing 97 per cent of the sample size, and found valid for the analysis. Graphical representation of the response rate is shown in Figure 1.

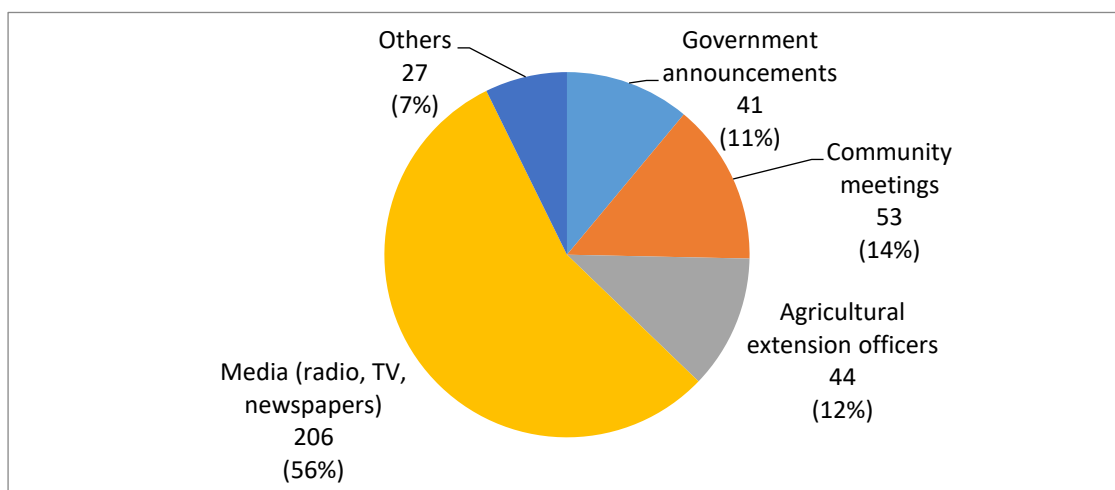


**Figure 1:** Analysis of Response Rate



**Figure 2:** Awareness of the Existence of Agricultural Extension Services

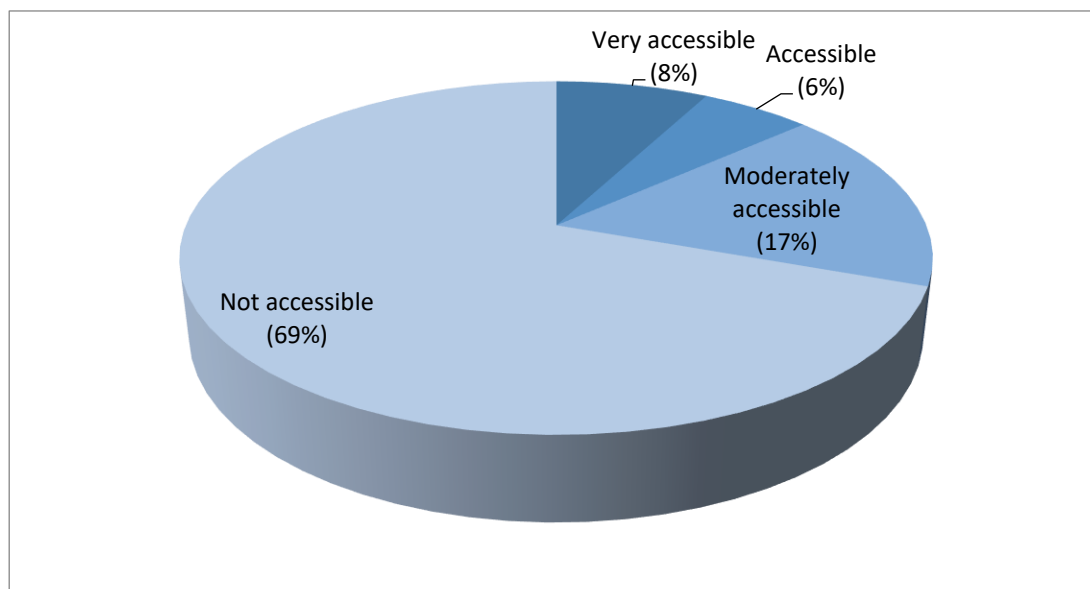
Data in Figure 2 above revealed that 85% responded in the affirmative, while 15% claimed that they are not aware of agricultural extension services in the State. During interview, a respondent asserted that “Agricultural extension services in my area have been on a low key. I have seen and heard about it, but not on a frequent basis”. Another stated that “The nature of agricultural extension services in my locality is not yet on a regular status”. It could be inferred that this high level awareness is important to aid Adamawa State towards food security.



**Figure 3:** Ways Respondents Learn about Agricultural Extension Services

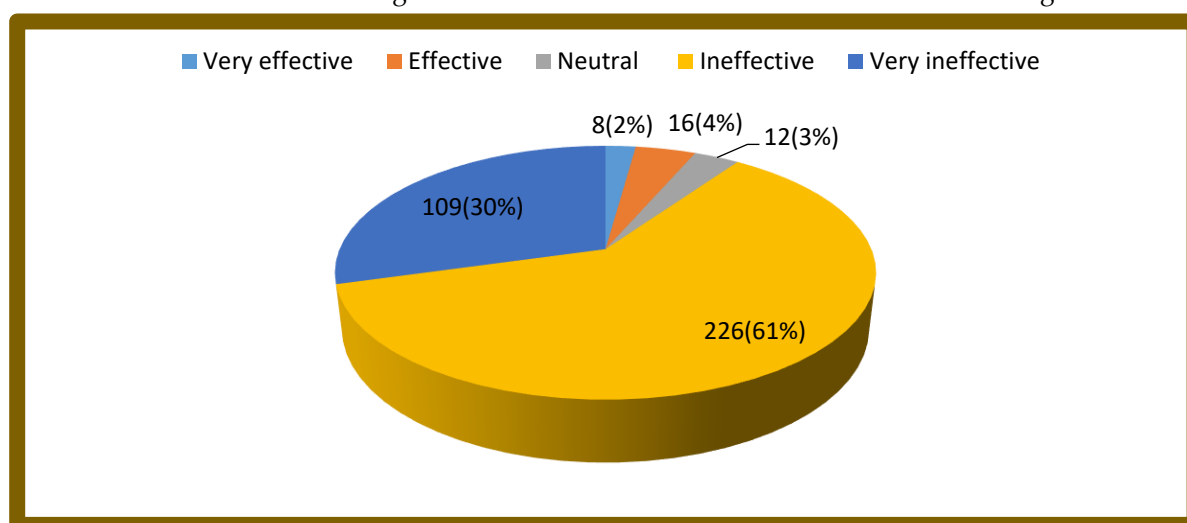
In furtherance to the question on awareness of the existence of agricultural extension, respondents were asked to indicate ways they get to know about agricultural extension services in Adamawa State. Figure 3 provides answers to this effect. Data in the Figure shows that 11% of the respondents receive information regarding agricultural extension services from government announcements of the respondents, 14% opined that they learn about agricultural extension services through community meetings, while 12% indicated that agricultural extension workers provide them with information concerning farming activities. Most of the respondents accounting for 56% revealed

that they received messages on agricultural extension from the mass media, while 7% indicated that they get information from other sources. Interview session further confirmed the quantitative findings. A participant opined that “I got to know more about extension services through the radio, even though this is from time to time”. Another respondent corroborated that “most time I hear it on radio stations”.



**Figure 4:** Accessibility of Agricultural Extension Services

The respondents were further asked to rate the level of accessibility of agricultural extension services. Figure 4 reveals that extension services in studied localities is not doing enough as indicated by 69% of respondents. They ticked “not accessible”. 17% of the respondents reported that extension programmes in the state is moderately accessible, 8% indicated that extension services are very accessible, while 6% submitted that the services of extension workers is accessible. In a KII, a respondent stated that “extension services in my local government have not live up to expectation”. Another was of the opinion that “the extension workers are very few, how do you expect them to cover the entire local government? The end result is of course limited coverage”.



**Figure 5:** Effectiveness of the Extension Service Programmes and Policies

Consequently, the data in Figure 5 shows that majority of the respondents making up 61% indicated that agricultural extension services have not been effective in terms of promoting food security in their areas. Key Informant Interviews also affirmed the findings. The interview session established that the activities of extension workers in the studied local government areas have not been expansive. An extension officer noted that due to shortage of extension workers and other challenges, their services have not been much felt. According to him, what we do most times is to make use of the media, especially when there are new innovations that we want the farmers to know. Another key informant pointed that media has been the instruments, the most used to enlighten the farmers. We do not have adequate extension staff, so what we do to mitigate this shortage is to go to the media, especially radio to tell our farmers what to do if there is new crop practicing system, disease, prediction of floods etc. This finding therefore is an indication that extension services in Mangu, Quanpan and Bokkos Local Government Areas have not been fully utilised. This will greatly impact negatively on the drive towards food security in the State. The findings also have so much implication on food security in Nigeria, as extension services remain one of the best ways in tackling food shortages confronting the country.

**Table 1: Challenges Associated with Extension Services and Food Security**

Challenges	SA	A	UD	D	SD	Total	Mean Rating	Decision
Corruption	118	253	0	0	0	371	4.3	Accepted
Inadequate funding	138	233	0	0	0	371	4.3	Accepted
Insufficient extension workers	155	216	0	0	0	371	4.4	Accepted
Insufficient of modern tools for extension services	222	149	0	0	0	371	4.5	Accepted
Challenges of multiple languages		241	7	22	18	371		Accepted
Farmers held beliefs to traditional methods of farming	271	44	28	16	12	371	4.4	Accepted
Insecurity deterring extension workers to do their job effectively	111	238	6	9	5	371	4.1	Accepted
Lack of policy continuity by government	113	221	11	17	9	371	4.1	Accepted
Lack of effective policy and strategic planning implementation	226	115	7	10	13	371	4.4	Accepted
Weak monitoring and evaluation mechanism	222	135	14	0	0	371	4.5	Accepted
Lack of effective research and development	196	147	9	13	6	371	4.3	Accepted
Decaying infrastructure and facilities such as storage facilities, light, roads etc	196	175	0	0	0	371	4.5	Accepted
Lack of transportation	217	138	7	0	9	371	4.4	Accepted

Low farmer education levels	313		11	6	2	371		Accepted
Lack of training for the few extension workers and capacity building	241	88	21	10	11	371	4.4	Accepted
Ineffective top-down, supply-driven extension approaches	209	134	7	12	9	371	4.4	Accepted
Limited access to information and technology	237	114	11	6	3	371	4.5	Accepted
Low level of digital literacy	344	6	7	0	14	371	4.7	Accepted

Table 1 above depicts that respondents accepted all the options put forward. Adding their voices to this finding, some Key Informants posited that:

Just like everywhere, manpower is needed. We need more extension workers to enable us reach more farmers. Modern equipment are needed to enable us perform our job effective and efficiency. If we have these equipment they will help us to achieve the government agricultural policies and programmes. We also need training and re-training because the world is dynamic and also agriculture is dynamic, so, our staff need the required skills to meet up with global agricultural practices.

Another asserted that:

The major challenge as far as agricultural extension services are concerned is the poor implementation of policies and programmes on extension, poor funding, and most of the times we do not have transportation means because of the paucity of funds. What we always have from the government is very limited.

Also, another Key Informant corroborated that:

Generally, our department is faced with manpower problem in the sense that a local government that is supposed to have about 150 extension workers, in most cases see just 3 or 5. Also, funding is the major problem.

It could therefore be inferred from the findings that agricultural extension policies and programmes in Plateau State are yet to meet the objectives and goals of their formulation due to a number of challenges ranging from corruption to poor implementation, inadequate funding, and training issues, among others. The implication of this is that food shortage may continue to confront the State, except the government takes decisive actions by fully and sincerely implementing its agricultural policies and programmes.

## 6. Research methodology

The study utilised a mixed method of qualitative and quantitative research strategy. The purpose of adopting the mixed research approaches include: to complement the lapses of one approach by the other; and qualitative research approach equally allows participants ample liberty to describe their feelings in

their own words and possibly in their local dialect. The reason for adopting the mixed approaches is because the result of one approach can be used to help bridge the gap of the other. Thus, the study utilised survey and Key Informant Interview (KII).

The population of the study comprised of members of farmers' association, and non-registered farmers, local government agricultural officials and extension workers in Mangu, Quanpan and Bokkos Local Government Areas (LGA) of Plateau State. The sample derived through non-probability sampling for Key Informant Interview (KII) was 30. The sample derived from probability sampling for the questionnaire administration was 381. This was done through equal representative technique of the three areas of study. For the KII, 10 were conducted in each LGA, while for the quantitative aspect, 127 respondents were used in each locality.

Additionally, the multistage sampling technique was employed. The first sampling stage was stratification, where the researcher stratified the state into southern, northern and central zones. The second stage involved the purposive selection of one Local Government Area from each zone with high concentration of agricultural production and attraction of agricultural intervention projects. These LGAs are Mangu, Quanpan and Bokkos.

Furthermore, random sampling was used to select three (3) communities in each LGA, which gave a total of nine (9) communities for the research. In Quanpan LGA, Namu, Bakinciyawa and Kurgwi communities were selected; Maikatako, Sha and Bokkos town in Bokkos LGA; and Panyam, Daika and Mangu-Halle in Mangu LGA. The 381 copies of the structured questionnaire were distributed to the respondents during the field work by the researcher and three trained research assistants in each LGA. In addition, key informant interviews were conducted for extension workers and heads of Agricultural Departments in each LGA. Language interpreters were used to explain the questions to the respondents who did not understand English language.

Quantitative data were analysed using descriptive statistics. Results were presented through the use of tables, figures, frequencies, and percentages. Mean deviation of five-point likert scale, which the criterion mean was put at 3.0 and above is accepted result, while 2.0 and below is rejected result were also used for the analysis and presentation of quantitative data. The qualitative data obtained through interviews conducted were analysed using deductive analysis.

## **7. Results and discussions**

Level of awareness of agricultural extension service policies and programmes of Plateau State government and channel through which the respondents get information regarding these policies and programmes: The study established that most of the respondents are aware of agricultural policies and programmes of the government. The study also found that the mass media is the most utilised platform to communicate extension service messages to the farmers.

**Effectiveness of the extension service programmes and policies:** Further finding showed that agricultural extension services are not easily accessible by the farmers; however, some of the respondents do not usually participate actively in extension service programmes. The implication of this could be continuous rise in food shortages in Mangu, Quanpan and Bokkos Local Government Areas and by extension Plateau State. The findings of the study equally revealed that the effect of extension services is minimal. This corroborates the view of Amaechi (2018) that many agricultural production policies and programmes have been initiated in Nigeria even before the country got

independence and after independence but the issues have been paying lip services by successive administrations. Kumar earlier study (2020) found that food security in India remains a major challenge due to low utilisation policy and programmes regarding of agricultural extension activities.

However, the these findings negate a study by North American Agricultural Advisory Network (NAAAN) (2022), which revealed that agricultural extension services in Canada is impactful on farmers as it has created awareness on various methods of planting, caring, harvesting and storage of farm produce. The finding also negates the thrust of the Modernisation Theory adopted in this research. This implies that, despite the provisions of this theory, which states teaching farmers modern methods of farming is capable of making them to replace traditional agricultural practices with scientific knowledge. These findings, therefore, imply that Mangu, Quanpan and Bokkos Local Government Areas have not effectively taken into cognizant the crux of this theory to expand the scope of its agricultural activities through the extension services initiative. According to modernity, policies intended to raise the standard of living of the poor often consist of disseminating knowledge and information about more efficient techniques of production. For instance, the agriculture modernisation process involves encouraging farmers to try new crops, new production methods and new marketing skills. The focal point of the theory is the dissemination of new innovations, ideas, products or positive agricultural development programmes and policies with a view to following the developmental footsteps of Europe.

**Challenges associated with extension services and food security in among the respondents:** Finding further revealed that some of the challenges confronting agricultural extension services and food security in Mangu, Quanpan and Bokkos Local Government Areas to include inadequate funding, weak monitoring and evaluation mechanism, corruption and lack of effective research and development. Others are decaying infrastructure and facilities such as storage facilities, light, roads, poor transport system, low level of education among farmers, lack of training for the few extension workers and capacity building, as well as low private sector participation. Further challenges revealed, limited access to information and technology, low level of digital literacy, lack of effective policy and strategic planning implementation, lack of policy continuity by government, and insecurity deterring extension workers to do their job effectively. Insufficient extension workers, lack of modern tools for extension services, multiple languages, and farmers held beliefs to traditional methods of farming are many other challenges identified by the study. Earlier finding by Fadlullah and Adiyu (2020) corroborated that agricultural extension services in Nigeria is still not performing as expected due to a number of challenges such as insufficient funding, shortage of extension workers, among others. Dia and Kobani (2024) also affirmed that agricultural extension in Nigeria still faced the challenges of access by farmers.

## **8. Contributions/Implications of the Study**

Knowledge remains something that increasing daily. Therefore, this investigation is important due to the fact that it has contributed growing body of literature on agricultural extension services not only in Plateau State, but in Nigeria and the world as a whole. Researchers across the world have conducted studies related to the impact and challenges of agricultural extension on food security. Nonetheless, of all the studies, none of them focused on agricultural extension services and food

security in Mangu, Quanpan and Bokkos Local Government Areas of Plateau State, Nigeria in 2025. The implication of this is that the study has contributed to knowledge because it will assist researchers, local, national and international agricultural organisations to have understanding the nature and characteristics of agricultural extension services in Mangu, Quanpan and Bokkos Local Government Areas of Plateau State, Nigeria. Another implication of the study is that if government of Plateau State does not take decisive measure in advancing the knowledge of farmers in rural communities, the state and Nigeria by extension will continue to witness food shortages.

## 9. Recommendations

- Plateau State Government should address infrastructure deficits such as transportation, digital technology and communication as well as others that support extension programmes in the state.
- The Plateau State Government and Local Governments should strengthen the funding for better promotion of agricultural extension services.
- The Plateau State Government in collaboration with Local Governments should establish a State Agricultural Extension Data Bank.
- The Plateau State Government should strengthen the policy, legal and institutional frameworks for agricultural extension services in the state.

## 10. Conclusion

The concern of the study has been on agricultural extension services and food security in Mangu, Quanpan and Bokkos Local Government Areas of Plateau State, Nigeria. From the findings of this study, it is concluded that food shortages continue to affect these LGAs due to ineffective extension service policies and programmes. Others are insufficient extension workers, lack of modern tools for extension services, multiple languages, and farmers held beliefs to traditional farming methods.

## ORCID

Bernard Diesuk Lucas  <https://orcid.org/0009-0006-6865-1418>

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