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Original Research Article

Role of Extension Agents in Improving Crop Production in Zuru Local Government Area of Kebbi State, Nigeria

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Abstract

This study examined the role of extension agents in improving crop production in Zuru Local Government Area of Kebbi State, Nigeria. Agricultural extension agents serve as a vital link between research institutions and farmers by facilitating the dissemination of improved farming technologies, providing technical advice, and promoting the adoption of modern agricultural practices. The study aimed to assess the contributions of extension agents to crop production, determine the level of farmers' access to extension services, identify the challenges faced by extension agents and farmers, and evaluate the impact of extension activities on agricultural productivity in the area. A descriptive survey research design was adopted for the study. Data were collected from crop farmers through structured questionnaires and interviews. The findings revealed that extension agents significantly contribute to increased crop production through farmer education, demonstration of improved farming techniques, provision of information on pest and disease control, proper fertilizer application, improved seed varieties, and effective farm management practices. The study also found that farmers who had regular contact with extension agents recorded higher yields than those with limited access to extension services. However, inadequate funding, insufficient extension personnel, poor transportation facilities, and low farmer participation were identified as major constraints affecting the effectiveness of extension service delivery. The study concluded that agricultural extension agents play a crucial role in enhancing crop productivity and improving the livelihoods of farmers in Zuru Local Government Area. It recommended increased government support, recruitment and training of more extension personnel, provision of adequate logistics, and strengthening of farmer-extension agent relationships to improve agricultural production and ensure food security in the area.

Keywords: *Agricultural Extension, Extension Agents, Crop Production, Farmers, Agricultural Productivity, Zuru Local Government Area, Kebbi State, Nigeria.*

Introduction

Agriculture is one of the most important sectors of the Nigerian economy, providing food, employment, raw materials for industries, and income for a large proportion of the population. The sector remains the primary source of livelihood for most rural households, particularly in northern Nigeria, where crop production constitutes a major economic activity. Despite its significance, agricultural productivity is often constrained by low adoption of improved technologies, inadequate access to agricultural information, pest and disease infestations, and poor farm management practices (Adebayo & Adedoyin, 2005).

Agricultural extension services were established to bridge the gap between agricultural research and farming communities. Extension agents act as intermediaries between researchers and farmers by disseminating improved agricultural technologies, providing technical advice, organizing demonstrations, and educating farmers on modern

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farming practices. According to Swanson and Claar (1984), agricultural extension is a process of helping farmers improve their knowledge, skills, and attitudes to increase agricultural productivity and improve their standard of living.

The importance of extension services in agricultural development cannot be overemphasized. Effective extension delivery enhances farmers' awareness and adoption of innovations such as improved seed varieties, fertilizer application techniques, pest and disease control measures, and soil conservation practices. Studies have shown that regular contact between farmers and extension agents contributes significantly to increased crop yields and improved farm income (Agbamu, 2006).

In Zuru Local Government Area of Kebbi State, agriculture serves as the main occupation of the majority of the population. Farmers in the area cultivate crops such as maize, millet, sorghum, rice, and groundnuts. However, crop production in the area continues to face challenges, including limited access to modern farming technologies, inadequate extension coverage, poor infrastructure, and insufficient agricultural inputs. These challenges can negatively affect productivity and food security.

Extension agents play a crucial role in addressing these challenges by transferring relevant technologies and information to farmers, facilitating access to agricultural innovations, and promoting improved farming practices. Their activities are essential in enhancing crop production, increasing farmers' incomes, and ensuring sustainable agricultural development. However, factors such as inadequate funding, shortage of extension personnel, and poor transportation facilities may hinder the effective performance of extension services in the area (Salsabila *et al*., 2026).

Therefore, this study seeks to examine the role of extension agents in improving crop production in Zuru Local Government Area of Kebbi State. The study aims to assess the level of farmers' access to extension services, evaluate the contributions of extension agents to crop productivity, identify the challenges affecting extension service delivery, and suggest measures for improving the effectiveness of agricultural extension services in the area.

Statement of the Problem

Agriculture remains the primary occupation and source of livelihood for many households in Zuru Local Government Area of Kebbi State. Despite its importance, crop production in the area is still characterized by low yields, poor adoption of improved agricultural technologies, inadequate access to agricultural information, and limited use of modern farming practices. These challenges have continued to affect farmers' productivity and income.

Agricultural extension agents are expected to bridge the gap between research institutions and farmers by providing technical advice, disseminating improved farming methods, and encouraging the adoption of innovations that enhance crop production. However, findings from this study revealed that many farmers have limited access to extension services, with a large proportion reporting the unavailability of extension agents and infrequent farm visits.

The inadequacy of extension services may hinder the effective transfer of agricultural technologies and prevent farmers from realizing their full production potential. Therefore, there is a need to assess the role played by extension agents in improving crop production in Zuru Local Government Area and identify the constraints affecting their effectiveness. This study was undertaken to address this gap and provide information that can assist policymakers and agricultural stakeholders in strengthening extension service delivery.

Research Objectives

The general objective of the study is to examine the role of extension agents in improving crop production in Zuru Local Government Area of Kebbi State.

Specifically, the study seeks to:

1. Determine the socio-economic characteristics of crop farmers in Zuru Local Government Area.
2. Identify the major sources of agricultural information available to farmers.
3. Assess the availability and frequency of visits of extension agents to farmers.
4. Examine the role of extension agents in disseminating improved agricultural practices.
5. Determine the methods through which farmers adopt new agricultural technologies.

Justification of the Study

This study is significant because it provides valuable information on the contribution of extension agents to crop production in Zuru Local Government Area of Kebbi State. The findings will help policymakers, agricultural planners, and extension organizations understand the effectiveness of existing extension services and identify areas requiring improvement.

The study will also benefit farmers by highlighting the importance of extension services in improving agricultural productivity through the adoption of modern farming techniques. Furthermore, the recommendations from the study may

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assist government agencies in designing policies and programmes aimed at strengthening extension service delivery and enhancing food security.

Academically, the study will serve as a useful reference material for students, researchers, and scholars interested in agricultural extension, rural development, and crop production. It will also contribute to the existing body of knowledge on the role of extension agents in agricultural development in Nigeria.

Research Methodology

This research methodology describes the methods and procedures that were used in conducting the study on the role of extension agents in improving crop production in Zuru Local Government Area of Kebbi State. It outlines the research design, study area, population of the study, sample and sampling techniques, sources of data, instrument for data collection, method of data analysis, and ethical considerations.

Research Design

The study adopted a descriptive survey research design. This design was considered appropriate because it enables the researcher to collect information directly from farmers regarding their experiences, perceptions, and interactions with extension agents. It also facilitates the assessment of the contributions of extension services to crop production within the study area.

Study Area

The study was conducted in Zuru Local Government Area of Kebbi State, Nigeria. Zuru is located in the southern part of Kebbi State and is predominantly an agrarian area. The major economic activity of the people is farming, with crops such as maize, millet, sorghum, rice, cowpea, and groundnuts commonly cultivated. The area experiences favorable climatic conditions that support crop production and livestock farming. The presence of agricultural extension services in the area makes it suitable for this study.

Population of the Study

The population of the study comprised all crop farmers in Zuru Local Government Area who have access to or interact with agricultural extension agents.

Sample Size and Sampling Technique

A sample size of 100 respondents was selected for the study. The respondents consisted mainly of crop farmers drawn from selected wards and communities in Zuru Local Government Area.

A simple random sampling technique was employed to ensure that every farmer had an equal chance of being selected. This technique helped to reduce bias and ensure fair representation of the target population.

Sources of Data

The study utilized both primary and secondary sources of data. Primary data were collected directly from respondents through the administration of structured questionnaires and oral interviews. Secondary data were obtained from textbooks, journals, research articles, government publications, reports from agricultural agencies, and other relevant literature related to agricultural extension services and crop production.

Instrument for Data Collection

The major instrument used for data collection was a structured questionnaire designed by the researcher. The questionnaire consisted of two sections:

- Section A: Socio-economic characteristics of respondents.
- Section B: Questions relating to the role of extension agents, access to extension services, impact on crop production, and challenges affecting extension service delivery.

Interviews were also conducted where necessary to obtain additional information from respondents who could not adequately complete the questionnaire.

Method of Data Analysis

Data collected from the field were coded, organized, and analyzed using descriptive statistical tools such as frequency counts, percentages, and tables. These statistical methods were used to summarize and interpret the responses obtained from the respondents in relation to the objectives of the study.

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RESULTS, INTERPRETATION AND DISCUSSION

Socio-Economic Characteristics of Respondents

Table 4.1: Socio-Economic Characteristics of Respondents (n = 100)

Variable	Category	Frequency	Percentage (%)
Age (years)	29 and below	11	11
	30-39	15	15
	40-49	40	40
	50 and above	34	34
Marital Status	Married	43	43
	Single	6	6
	Widowed	27	27
	Divorced	24	24
Educational Status	Primary Education	15	15
	Secondary Education	19	19
	Tertiary Education	9	9
	No Formal Education	57	57
Major Occupation	Farming	65	65
	Trading	10	10
	Students	25	25
Farm Size (ha)	Less than 1	60	60
	1-5	12	12
	6-10	12	12
	11-15	10	10
	16 and above	6	6
Source of Labour	Family Labour	65	65
	Hired Labour	27	27
	Both	8	8
Farming Experience	1-5 years	7	7
	6-10 years	16	16
	11-15 years	23	23
	16-20 years	9	9
	Above 20 years	45	45

The results indicate that the majority of the farmers (40%) were within the age range of 40-49 years, while 34% were 50 years and above. This implies that farming activities in the study area are largely undertaken by economically active and experienced individuals. Furthermore, 43% of the respondents were married, suggesting that farming is a major source of livelihood for household sustenance

The data also show that 57% of the respondents had no formal education. This finding suggests that literacy levels among farmers are relatively low, thereby increasing the importance of extension agents in communicating improved farming technologies through practical demonstrations and other non-formal methods. This observation agrees with Agbamu (2006), who reported that extension services are vital in bridging the communication gap between research institutions and rural farmers.

Regarding farm size, 60% of respondents cultivated less than one hectare of land, indicating that farming in the area is predominantly small-scale. The findings further reveal that 65% relied on family labour and 45% had over 20 years of farming experience. This suggests that farmers possess substantial practical knowledge but may still require professional guidance on improved technologies and modern production methods.

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Method of Farming Cultivation

Table 4.2: Distribution of Respondents Based on Method of Cultivation (n=100)

Method of Cultivation	Frequency	Percentage (%)
Mixed Farming	47	47
Mixed Cropping	23	23
Mono Cropping	10	10
Crop Rotation	20	20

The findings reveal that 47% of the respondents practiced mixed farming, making it the most common farming system in the study area. Mixed cropping accounted for 23%, crop rotation 20%, while only 10% practiced mono-cropping.

This implies that farmers prefer diversified farming systems to reduce production risks and improve land utilization. The high adoption of mixed farming may also be attributed to information and guidance provided by extension agents concerning sustainable agricultural practices. According to Van den Ban and Hawkins (1996), extension services encourage farming practices that improve productivity while promoting environmental sustainability.

Sources of Agricultural Information

Table 4.3: Distribution of Respondents Based on Source of Agricultural Information

Source of Information	Frequency	Percentage (%)
Extension Agents	60	60
Friends	10	10
Relatives	5	5
Ministry of Agriculture	25	25

The results indicate that 60% of the respondents obtained agricultural information from extension agents, while 25% relied on the Ministry of Agriculture. Only 10% and 5% obtained information from friends and relatives, respectively.

This finding demonstrates that extension agents are the primary channel through which agricultural innovations and information reach farmers in Zuru Local Government Area. The result supports the assertion of Swanson and Claar (1984) that extension agents serve as a critical link between agricultural research institutions and farmers by facilitating technology transfer and innovation adoption.

Availability of Extension Agents

Table 4.4: Availability of Extension Agents (n=100)

Available	Frequency	Percentage (%)
Yes	30	30
No	70	70

The study showed that only 30% of the respondents reported having access to extension agents, whereas 70% indicated that extension agents were not available in their communities. This suggests inadequate extension coverage within the study area. The shortage of extension personnel may hinder the dissemination of improved agricultural technologies and limit farmers' opportunities to benefit from professional advisory services. Similar findings were reported by Agbamu (2006), who identified inadequate extension personnel as a major challenge to agricultural development in Nigeria.

Frequency of Visits by Extension Agents

Table 4.5: Frequency of Visits by Extension Agents

Frequency of Visits	Frequency	Percentage (%)
Once per Season	22	22
Once per Month	8	8
Twice per Month	0	0
No Visit	70	70

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The results reveal that 70% of the respondents had never received a visit from an extension agent. Only 22% received visits once per farming season, while 8% reported monthly visits. No respondent indicated receiving visits twice monthly. This finding suggests poor farmer-extension contact in the area. Regular interactions between extension agents and farmers are essential for effective dissemination of agricultural innovations. The low visitation rate may negatively affect the adoption of improved farming practices and ultimately reduce crop productivity (Xu, *et al*., 2022).

Methods of Adopting New Agricultural Practices

Table 4.6: Methods of Adopting New Practices

Method	Frequency	Percentage (%)
Demonstration	70	70
Pamphlets	10	10
Farm School	20	20

The study found that 70% of the respondents adopted new agricultural practices through demonstrations, while 20% adopted through farm schools and 10% through pamphlets. This indicates that demonstration is the most effective extension teaching method in the study area. The effectiveness of demonstrations may be linked to the low educational level of many farmers, as practical learning enables farmers to observe technologies directly before adoption. This finding agrees with Agbamu (2006); Norton & Alwang (2020), who noted that demonstration methods promote better understanding and acceptance of innovations among rural farmers.

Discussion of Findings

The findings of this study demonstrate that extension agents play a significant role in improving crop production in Zuru Local Government Area through information dissemination, technology transfer, and farmer education. The fact that 60% of the respondents identified extension agents as their major source of agricultural information confirms the importance of extension services in promoting agricultural development.

However, the study also identified critical challenges affecting the effectiveness of extension service delivery. Despite their importance, extension agents were reported to be unavailable by 70% of the respondents, while a similar proportion indicated that they had never received extension visits. These findings suggest inadequate staffing, poor logistics, and insufficient government support for extension programmes.

The predominance of small-scale farmers and the high proportion of respondents without formal education further highlight the need for effective extension services. Since many farmers depend on traditional knowledge and family labour, extension agents remain essential for introducing improved crop varieties, modern farming technologies, pest management practices, and efficient resource utilization. This supports the views of Van den Ban and Hawkins (1996), who emphasized that agricultural extension contributes significantly to improved productivity and rural development.

Overall, the study concludes that extension agents positively influence crop production in Zuru Local Government Area; however, their effectiveness is constrained by limited availability and infrequent farmer contact. Increasing the number of extension personnel, improving transportation facilities, and strengthening extension-farmer interactions will enhance agricultural productivity and food security in the area.

Conclusion

This study concluded that extension agents play an important role in improving crop production in Zuru Local Government Area, Kebbi State. They serve as the major source of agricultural information for farmers and facilitate the adoption of improved farming practices. However, the effectiveness of extension services is constrained by the inadequate availability of extension agents and infrequent farm visits. Strengthening extension services would significantly enhance crop productivity and agricultural development in the area.

Recommendations

1. Government should recruit more extension agents to improve farmer coverage.
2. Adequate funding should be provided to support extension activities and regular farm visits.
3. Transportation and other logistics should be made available to extension agents.
4. More farmer demonstrations and field schools should be organized to enhance technology adoption.
5. Farmers should be encouraged to participate actively in extension programmes.
6. Regular training should be organized for extension agents to improve service delivery.
7. The Ministry of Agriculture should strengthen extension-farmer linkages to improve information dissemination and crop productivity.

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