# THE ROLE OF SMALLHOLDER FARMERS IN ENHANCING FOOD SECURITY IN CHIKUN LOCAL GOVERNMENT AREA OF KADUNA STATE

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## ABSTRACT
*This study investigated the role of smallholder farmers in enhancing food security in Chikun Local Government Area (LGA) of Kaduna State. A structured questionnaire was administered to 400 hundred respondents that were selected from four wards in the Local Government Area. Descriptive statistics was used to summarize the data. The study revealed that 60.0% of the smallholder farmers were engaged in the production of grains such as maize, rice and beans and 7.9 % of them were engaged in livestock production. They attributed the low proportion of smallholder farmers engaged in livestock production to the high cost associated with livestock farming and the corresponding lack of skills in livestock production. In all, 27.9% of the smallholder farmers indicated that the most significant challenge faced by the smallholder farmers was lack of access to credit facilities. The study suggested the need for government at all levels to provide affordable credit facilities to the farmers to enhance their productive capacities. Also, the both the state and Local Government should create policies that will ensure the prioritization of the needs of smallholder farmers through the provision of grants, technical assistance and livelihood infrastructure.*

**Key words: Small, holder, farmers, food security**

## INTRODUCTION
The role of small-scale farmers in ensuring food, nutrition security and sustainable rural development in Africa is becoming more crucial as the world faces increasing climate change challenges (NEPAD, 2013). The ability of smallholder farmers to mitigate environmental particularities in sub-Saharan Africa is by the adoption of local methods, using native knowledge and experience past down from generations to mitigate perceived harsh environmental conditions for farming activities (Omotilewaet al., 2021). Moreover, from a biodiversity standpoint, these smallholding farmers are seen as biodiversity friendly as most of

them cannot afford fertilizers and are into mixed farming, and make use of livestock manure on their farms (Chiakaet al., 2021).

Food security is one important goal a nation must pursue with passion in order to combat hunger and malnutrition among citizens (Antonaciet al., 2014). Smallholder farmers are the suppliers of food to the tables of Nigerians. In fact, a report has revealed that more than 80% of the total farmers in Nigeria, including both medium and large ones, are smallholder farmers (Akinsuyi, 2011). Despite farming on small plots of land, the collective numbers of smallholder farmers drive food production in Nigeria and account for 90% of the agricultural produce in Nigeria. They are also responsible for about 98% of food consumed in Nigerian homes, with wheat as the only exception (Babbangona, 2020).

Most of the time, small farmers do not have access to the information about market demands, nor do they have access to the information about the relationship between price and product characteristics such as colour, size, shape, texture and freshnessamongst other things (Kapariet al., 2023).Ramatshekgisaet al. (2024), highlighted the smallholder farmers' agricultural practices which are crop farming and livestock farming. Moreover, increased food supply, job opportunities, and income generation were highlighted as the contributions of the smallholder farmers toward household food security. Olawoyiet al. (2024), revealed that almost 86% of the farmers have strong and positive perception about the effectiveness of indigenous knowledge practice on agricultural production, while approximately 90% of the farmers are food insecure (those in the chronic and moderate food insecurity categories). One of the major causes of inflation in food prices in the country in recent times is the inability of smallholder farmersto visit their farmlands, because of the rising insecurity in the rural areas of northern Nigeria. This has reduced the level of production and supply in the country (Babbangona,2020).

ChikunLocal Government Area (LGA) in Kaduna state, like many areas in Nigeria is heavily reliant on rain-fed agriculture, hence farming is undertaken only within five months in a year. While smallholder farmers a very essential in guaranteeing food security, challenges facing smallholder farmers is affecting food security in Northern Nigeria. The main objective of this study was to assess the contribution of smallholder farmers in achieving food security in Chikun LGA of Kaduna State. The study also tried to highlight the challenges faced by smallholder farmers in the LGA.

Smallholder farmers are taken here to mean those farmers, pastoralist and fishers practicing agriculture in limited amount and land area. They are operating

relatively small-scale agricultural model by cultivating between one and ten hectares of land or keeping small number of livestock. In most cases they rely on family labour for their farming operations. To identify the challenges faced by smallholder farmers in enhancing food security in Chikun Local Government Area.

## THE STUDY AREA

ChikunLGA is situated in the southern part of Kaduna State, Nigeria, with geographical coordinates of approximately 10°17'6" N and 7°6'37" E.Chikun LGA shares borders with several other Local Government Areas: KajuruLGA to the East, Kachia LGA to the South, Kaduna South to the Northeast, Igabi LGA to the Northeast, BirninGwariLGA to the Northwest, Munya and Shiroro LGAs (all in Niger State) to the South and West respectively. The headquarters of Chikun LGA is located in the town of Kujama (See Figure 1). The area encompasses various towns and villages, including Bagado, Kashebo, Mafoina, MatariKujama, Sabon Tasha, Tsauni Kura, Narayi, and Gayan.

Chikun LGA had a population of 327,272 people as at the 2006 Population and Housing Census. The Gbagyi people are the dominant ethnic group in the area, and the Gbagyi language is widely spoken. Islam and Christianity are the major religions practiced within the community. The traditional administration of the area is overseen by the Sa Gbagyi. A notable landmark in Chikun LGA is the Kaduna Refinery and Petrochemical Company and the Olam Poultry Plant, which employ significant number of people.Chikun LGA has a land area of about 4,466 square kilometers, making it one of the largest Local Government Areas in Kaduna State. The LGA is strategically located along major transport routes, including the Kaduna-Abuja Expressway. Its proximity to the city of Kaduna, the state capital, enhances its economic and social significance (Kaduna Bureau of Statistics [KBS], 2023).

Chikun Local Government Area, like most parts of northern Nigeria, experiences a tropical climate with distinct wet and dry seasons throughout the year. The climate is characterized by hot and dry conditions during the dry season and relatively cooler temperatures during the rainy season. The dry season typically lasts from November to March.). The rainy season in Chikun LGA usually starts in April and lasts until October. This climatic pattern supports agricultural activities in the area (KBS, 2023).

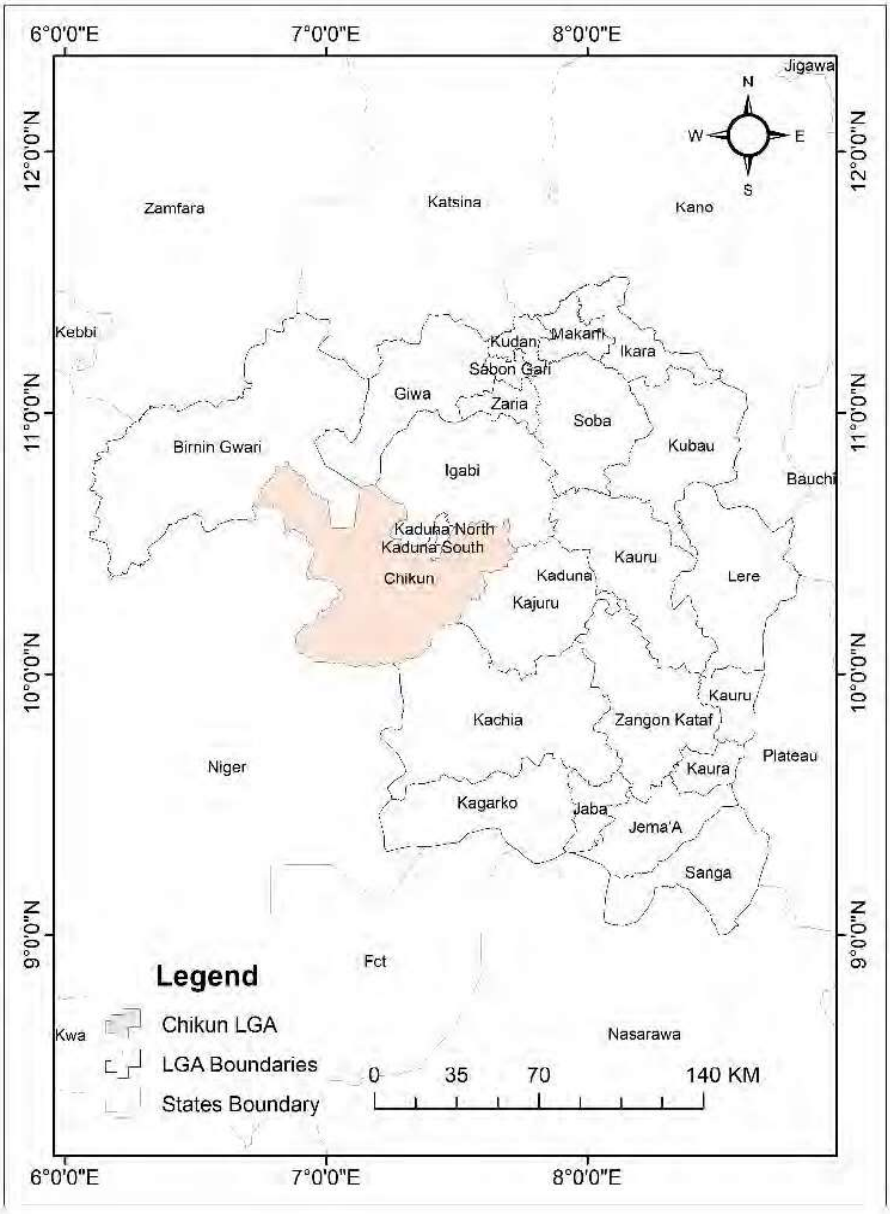


**Figure 1:**Map of Kaduna State Showing Chikun Local Government Area
**Source:** Kaduna State Geographic 2023

Agriculture is the primary economic activity in Chikun LGA. The area is known for the cultivation of various crops, including maize, millet, sorghum, beans, yams, and cassava. Farmers engage in both subsistence and commercial farming, supplying local markets and sometimes neighboring states(KBS,2023)

## MATERIALS AND METHOD

This research utilized two main sources of data collection: primary data and secondary data.The primary data was collected through the use of questionnaires and interviews. Questionnaires were administered to smallholder farmers and extension workers in various wards of the study area. Interviews provided additional qualitative insights from key stakeholders.Secondary data was sourced from relevant existing literature on the topic under study, including textbooks, journals, and seminar papers.

### Sampling Size and Sampling Technique

The sampling technique used in this study is simple random sampling. This method was chosen because it gives every subject in the population an equal chance of being selected, thereby reducing sampling bias. The study area has 12 wards, from which four wards (Chikun, Nasarawa, Rido, and Kujama) were randomly selected for the survey. Yamane Toro (1967) Model was employed to determine the appropriate sample size from the population of the study. After applying the formula, the sample size for the study was 400Respondents. The data generated are quantitative in nature. The results of the variables obtained are arranged according to frequency of occurrences.

## RESULTS AND DISCUSSION

### Socio-Economic Characteristics of Respondents

Understanding the socio-economic background of the respondents provides a foundation of assessing their role in local food security, including gender, marital status, age, education level, household size, farm size and year of farming experience. Table 1 shows the distribution of the respondents by certain socio-demographic characteristics. The distribution by gender shows that 70.0% of the respondents were males and 30.0% were females. This distribution is to be expected as culturally, there are more males in agriculture than females. The relatively high proportion of females (30.0%) reflect the increasing number of female headed households in Chikin LGA.

The distribution by marital status shows that 48.1% of the respondents were in marital union, 42.9% were never married and 6.1% and 2.9% were divorced and widowed respectively.The high proportion of respondents who are single is not unexpected. Chikun LGA is one of largely urban LGAs in Kaduna State and

urban settlements tend to have high proportion of population who are single (never married).

**Table 1: Socio-Economic Characteristics of Respondents**

| Characteristics | Category | Frequency (380) | Percentage (%) |
|---|---|---|---|
| **Gender** | Male | 266 | 70.0 |
| | Female | 114 | 30.0 |
| | **Total** | **380** | **100.0** |
| **Marital Status** | Married | 183 | 48.2 |
| | Single | 163 | 42.9 |
| | Divorced | 23 | 6.1 |
| | Widowed | 11 | 2.9 |
| | **Total** | **380** | **100.0** |
| **Age** | Under 25 | 87 | 22.9 |
| | 25-34 | 84 | 22.1 |
| | 35-44 | 133 | 35.0 |
| | 45-54 | 49 | 12.9 |
| | 55 and above | 27 | 7.1 |
| | Total | **380** | **100.0** |
| **Level of Education** | Non formal education | 68 | 17.9 |
| | Primary education | 100 | 26.3 |
| | Secondary education | 136 | 35.8 |
| | Tertiary education | 76 | 20.0 |
| | **Total** | **383** | **100.0** |
| **Main Occupation** | Farming | 236 | 62.1 |
| | Trading | 72 | 18.9 |
| | Civil servant | 49 | 12.9 |
| | Other(specify) | 23 | 6.1 |
| | **Total** | **380** | **100.0** |
| **Household Size** | 1-3 | 103 | 27.1 |
| | 4-6 | 148 | 38.9 |
| | 7-9 | 68 | 17.9 |
| | 10 and above | 61 | 16.1 |
| | **Total** | **380** | **100.0** |

**Source: Field Survey (2024)**:

The distribution of respondents by age groups shows that those in the age bracket of 25 to 54 years made up 70.0% of the total respondents. This age bracket is the most productive as most people are in their prime and could handle physically

demanding jobs or tasks. The distribution by educational attainment as also shown in Table 1, reveals that majority of the respondents had at least secondary education with 55.8% (35.8% for secondary education and 20.0% for tertiary education). In all, 26.3% had primary education. A total of 17.9% reported having no formal education. These findings revealed that the majority of farmers in the study area had formal education, which could positively impact the adoption of modern farming practices and hence, improved productivity.

The distribution by main type of occupation as shown in Table 1 shows that agriculture playssignificant role in the livelihoods of respondents in the study area. A total of 62.1% of the respondents were engaged in farming as their primary occupation. Also, 18.9% and 12.9% were Traders and Civil/Public Servants respectively. Other forms of occupation accounted for 6.1% of the respondents. The distribution by household size shows that majority (38.9%) of the respondents were in households with 4-6 members. Households with 10 members and above were 16.1%. In farming communities, larger households can be beneficial because they provide more hands to work on the farm.

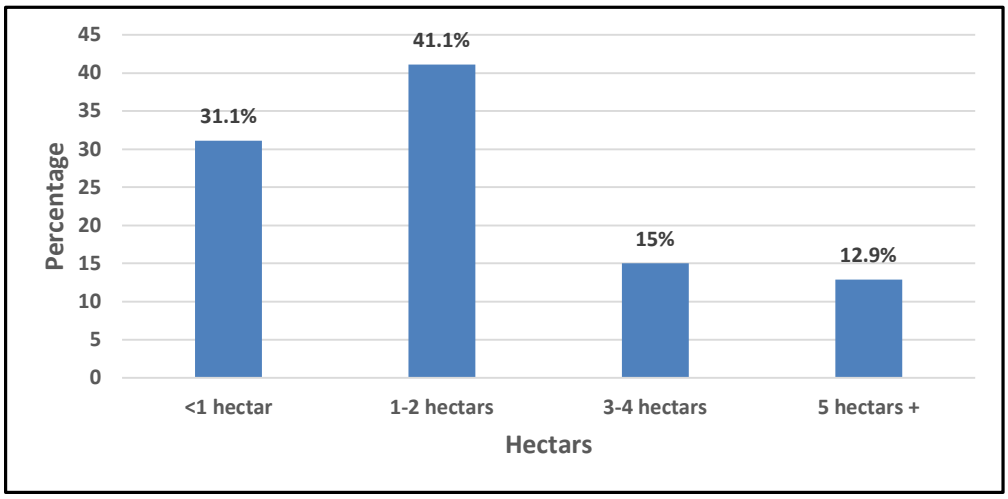


**Fig. 2: Distribution by Farm Size in Hectares**
**Source: Field Survey (2024),**

The respondents reported ownership of different farm sizes. Majority (41.1%) of the respondents had between 1 to 2 hectares farmland, closely followed by those with less than one hectare with 31.1%. Those with 5 hectares and above were made up of 12.9%. This distribution is not unusual as it is generally know that in

Nigeria like in other areas of sub-Saharan Africa (SSA), farm holdings are generally known to be very small because most farming is for subsistence.

**CONTRIBUTION OF SMALLHOLDER FARMERS TO FOOD SECURITY**

This section assessed the contributions of smallholder farmers to local food security and their frequency of food supply to local markets. Table 2 showed that 60.0% of the respondents produced grains such as maize, rice, soya beans, and beans, making grains the dominant agricultural product, a small proportion 2.0% produced other crops, such as sugarcane.

**Table 2**:**Contributions of Smallholder Farmers to Local Food Security**

| Category | Frequency (n) | Percentage (%) |
|---|---|---|
| Grains (Rice/Soyabeans/Maize&Beans) | 228 | 60.0 |
| Vegetables (tomatoes, onions) | 114 | 30.0 |
| Livestock (poultry, cattle) | 30 | 7.9 |
| Other | 8 | 2.1 |
| **Total** | **380** | **100.0** |

**Source: Field Survey (2024)**

Grains were favored because of the favorable climate and soil conditions in the study area, grains were also staple foods in the study area and had a consistently high demand, ensuring a stable market for farmers. Additionally, grains were easier to store and transport compared to perishable vegetables, making them a practical choice for many smallholders.

Livestock farming accounted for a smaller percentage of 7.9% due to higher costs associated with animal husbandry, such as feed, veterinary care, and housing. Farmers also lacked the expertise or resources required to manage livestock operations effectively. These findings indicated that smallholder farmers primarily focused on staple crops, with some diversification into vegetables and livestock.

**Frequency of Supplying Food Crops to Local Market**

Table 3 showed that respondents indicated varying frequencies of supply of food crops to local markets. In all, 44.7% of respondents supplied food crops weekly, while 26.3% supplied it monthly. An additional 19.2% supplied food crops to the market occasionally, and 9.5% did not supply any crops to local markets.

**Table 3**: **Frequency of the Supply of Food Crops to Local Market**

| Category | Frequency | Percentage |
|---|---|---|
| Weekly | 170 | 44.7 |
| Monthly | 100 | 26.3 |
| Occasionally | 73 | 19.2 |
| Never | 36 | 9.5 |

| | | |
|---|---|---|
| **Total** | **380** | **100.0** |

**Source: Field Survey (2024)**

Weekly sales allowed farmers to sell perishable crops, such as vegetables, while they were still fresh, which attracted more buyers and better prices. Regular market visits also helped farmers plan their finances and ensured stable cash flow for household expenses, farm supplies, and other necessities. Some farmers grew multiple crops or managed larger farms that produced a variety of vegetables and grains continuously throughout the season. This allowed them to harvest and sell produce more regularly.

Farmers who supplied food weekly often had easier access to markets and reliable transportation. This allowed them to transport their goods to the market without significant delays or costs, encouraging them to sell more frequently. Areas with better road access and market infrastructure made it easier for farmers to transport and sell their products every week. These findings revealed that the majority of smallholder farmers regularly supplied food to local markets, consistently supporting food availability in the study area.

**Challenges of Smallholder Farmers in Enhancing Food Security**

Table 4 shows the challenges his section identified the primary challenges faced by smallholder farmers in the study area such as limited access to financial resources, market access issues, lack of farming inputs, and other obstacles impacting their productivity and role in food security. Additionally, the types of support needed to overcome these challenges and the coping strategies employed by farmers were analyzed.

**Table 4**: **Challenges of smallholder farmers**

| Category | Frequency(n) | Percentage (%) |
|---|---|---|
| Lack of access to Credit | 106 | 27.9 |
| Poor market access | 68 | 17.9 |
| Inadequate farming inputs (seeds, fertilizers etc) | 68 | 17.9 |
| Land scarcity | 34 | 11.1 |
| Climate change (droughts, floods etc) | 42 | 16.3 |
| Insecurity | 62 | 17.2 |
| **Total** | **380** | **100.0** |

**Source: Field Survey (2024)**

Table 4 revealed that lack of access to credit was the most significant challenge, reported by 27.9% of respondents. Farmers cited financial limitations as a critical barrier to purchasing essential farming inputs, such as seeds, fertilizers, and equipment, which restricted their productivity and ability to expand operations. The high cost or unavailability of quality inputs, such as fertilizers and seeds, further exacerbated low yields and profitability. Insecurity was reported by 16.3%

of respondents as a significant concern, with theft and conflict varying by geographic location. Land scarcity was less common with only about 11.1% because some farmers had sufficient land through inheritance or other arrangements. These findings highlighted that financial limitations, market constraints, and inadequate inputs were the most pressing issues affecting smallholder farmers in the study area.

**Farmers' Coping Strategies**

Table 5 data shows that farmers adopt a variety of strategies to manage the challenges they faced. The common strategy, employed by farmers is diversifying their income sources with 41.6% of the respondents. Also, 28.0% and 26.3% engaged in cooperative farming and use of drought resistant crops respectively.

**Table 5 Coping strategies for the challenges**

| Category | Frequency (n) | Percentage (%) |
|---|---|---|
| Cooperative farming | 106 | 28.0 |
| Use of droughts resistant crops | 100 | 26.3 |
| Diversifying income sources | 158 | 41.6 |
| Other (specify) | 15 | 3.9 |
| **Total** | **380** | **100.0** |

**Source: Field Survey (2024)**

A small percentage (3.9%) indicating using otherunspecified methods.Farmers supplemented their income through petty trading, carpentry, and other non-farming activities. This diversification provided a safety net during periods of low yields or seasonal farming gaps, helping stabilize household finances.

**CONCLUSION**

Smallholder farmers in the study area are essential for improving food security and reducing hunger, primarily through the production of staple grains and supply of agricultural product to the markets. However, their productivity is limited by challenges such as lack of access to credit, poor market infrastructure, and insufficient farming inputs. These challenges threaten their livelihoods and hinder efforts to achieve food security and reduce poverty. Despite these obstacles, the farmers have shown resilience and willingness to continue farming if better support is provided.

To strengthen the role of smallholder farmers in achieving food security in the study , the following recommendations are revealed. Access to Affordable Credit: Government, NGOs, and financial institutions should provide low-interest loans or grants tailored to smallholder farmers' needs, Provision of the availability of

high-quality seeds, fertilizers, and pesticides through government subsidies or bulk purchase programs and Improving Market Access: Develop better roads, market facilities, and storage systems, and establish cooperatives to help farmers secure fair prices.

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