

**PROFITABILITY ANALYSIS OF MAIZE PRODUCTION IN  
ORHIONWON LOCAL GOVERNMENT AREA OF EDO STATE,  
NIGERIA**

**BY**

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BENIN CITY**

**NOVEMBER 2025**

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**BEING A PROJECT SUBMITTED TO THE DEPARTMENT OF  
AGRICULTURAL ECONOMICS AND EXTENSION SERVICES,  
FACULTY OF AGRICULTURE, UNIVERSITY OF BENIN, BENIN  
CITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR  
THE AWARD OF THE BACHELOR OF AGRICULTURE (B. AGRIC)  
(WITH OPTION IN AGRICULTURAL ECONOMICS AND  
EXTENSION SERVICES)**

**NOVEMBER 2025**

## CERTIFICATION

This is to certify that this project research work on the profitability analysis of maize production in Orhionwon local government area, Edo State, Nigeria was carried out by **Oboghabor Uwayemwen Miracle** with Matriculation Number **AGR2004285** in the Department of Agricultural Economics and Extension Services, University of Benin, Benin City, Edo State, Nigeria under my supervision.

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**DATE**

**DATE**

**DEDICATION**

Foremost, I want to dedicate this work to Almighty God who saw me through the B. Agric Programme successfully, to my loving parents Mr. & Mrs OBOGHABOR for their support, love, and encouragement. Hope I made you proud Mama.

My special appreciation to Mr. and Mrs Isibor, ( in living memory ) for their support on this journey, it would have been impossible without their generosity. my lovely siblings Mummy Iwino, Brother Ernest, Destiny and Omosigho my friend Osayuki for their love and support always.

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## **ABSTRACT**

This study analyzed the profitability of maize production in Orhionwon Local Government Area of Edo State, Nigeria. The research specifically examined the socio - economic characteristics of maize farmers, estimated production costs and returns, identified factors influencing profitability, and documented constraints faced by producers. A multi - stage sampling technique was employed to select 100 cassava farmers from five major farming communities in the local government area. Primary data were collected using structured questionnaires and analyzed using descriptive statistics, Gross margin analysis, multiple regression analysis and likert scale ranking.

Findings revealed that maize production in the area is dominated by small - scale farmers with 43% respondents between 19-40 years, 40% within 41-60 years and 17% above 60, with 52% male and 48% female, average farm size of 1.9 hectares, and relatively high educational attainment. Budgetary analysis showed the enterprise to be profitable with a gross margin of N617,702.44 and net profit of N544,730.44, Regression results identified farm size, yield and fertilizer cost as significant positive determinants of profitability, Major production constraints included insecurity, high labor costs, insufficient funds.

This study concludes that maize production remains a profitable enterprise in the study area. Recommendations include improve access to quality inputs, enhance

extension services, stabilize market prices and encourage youth participation. These interventions would significantly improve the income generation potential of maize production for smallholder farmers in the region.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the Study**

Agriculture continues to serve as the backbone of Nigeria's economy, playing a pivotal role in job creation, ensuring food security, and contributing significantly to the nation's Gross Domestic Product (GDP). It remains a primary sector that sustains the livelihoods of millions of Nigerians, especially those living in rural communities. Similar to other developing nations, Nigeria places immense importance on the agricultural sector, which forms the basis for industrial development, economic diversification, and the reduction of poverty and hunger across the country. Within the agricultural framework, maize has emerged as one of the most critical crops, both in terms of its economic contributions and its multiple uses across various industries (Onuwa, 2022). Numerous agro-based industries in Nigeria rely heavily on maize as a key raw material for their production processes (Onuwa, 2022).

One of the major uses of maize is in the formulation of livestock feeds, especially for the poultry sector, where it constitutes a large percentage of feed ingredients due to its high energy content. In addition to its use in animal nutrition, maize also plays an essential role in industrial applications. For instance, maize grains are processed to produce ethanol, which serves as a sustainable bio-fuel alternative and

is also used in the pharmaceutical industry for medicinal purposes. This dual use, both as food and industrial input elevates the status of maize as a strategic crop in Nigeria's path toward economic growth and sustainability. Although maize is botanically a grain, it is also considered a vegetable when harvested while still immature. At this stage, it is highly nutritious, providing important vitamins such as A, C, and E. When fully matured, maize becomes a rich source of carbohydrates, essential proteins, dietary fiber, and various minerals, making it a valuable component of human nutrition (Adedeji et al., 2023). This nutritional versatility positions maize not only as a staple food for millions of Nigerian households but also as an indispensable crop in achieving national food and nutrition security.

Moreover, among all staple crops cultivated in Nigeria, maize (*Zea mays*) stands out for its adaptability to various agro-ecological zones, its relatively short maturity period, and its wide range of uses. It is consumed directly by humans, used to feed animals, and processed into raw materials for different agro-allied industries (Adedeji et al., 2023). The multifaceted importance of maize has made it a centerpiece of agricultural planning and rural development programs in Nigeria. The demand for maize has been on a steady rise, largely driven by its increasing role in feeding a growing population and its expanding use in the livestock and poultry industries (Gebre *et al.*, 2021).

The economic relevance of maize is evident in its status as one of the most traded

and consumed crops in the country. It serves both as a food security crop and a commercial commodity, generating income for millions of farmers, marketers, and processors along the value chain. In addition to its domestic significance, Nigeria's maize production has substantial implications for regional food trade and cross-border agricultural commerce. According to (Adedeji et al., 2023), there are over 50 species of maize grown globally, each varying in color, size, shape, and texture—further underlining the crop's genetic diversity and global significance.

Maize has become the second most widely produced crop in the world, trailing only behind wheat, and it occupies a similar position of importance in sub-Saharan Africa (SSA), where it serves as a staple for many households and is cultivated alongside other arable crops for both consumption and income generation (Santpoort, 2020). Within Nigeria, maize is the most extensively cultivated crop in terms of land area, covering approximately 12,403,330 hectares, and production levels reached about 12.40 million metric tons in the year 2020. This makes Nigeria the second-largest producer of maize on the African continent, following South Africa, which recorded a production output of 16 million metric tons (Abdu et al., 2024).

Maize cultivation has gained momentum in many parts of Nigeria, particularly in the southern regions, due to increasing demand and favorable climatic conditions, Maize production has the potential to mitigate the present food insecurity and

alleviate poverty (Abdu, et Al., 2024). Despite the importance of maize to the local economy, many farmers still operate at subsistence levels. Profitability, a key indicator of economic performance, is often influenced by factors such as input costs, access to markets, farming practices, and institutional support (Adedeji et al., 2023). Therefore, a profitability analysis of maize production in Orhionmwon LGA is crucial in understanding the economic viability of the crop and in guiding policy and investment decisions.

## **1.2 Statement of Problem**

Maize stands out as one of the most important staple food crops and a key economic commodity in Edo State, playing a crucial role in the diets of local populations and serving as a significant source of income for farming households. Despite its prominence, a large number of maize farmers in the state continue to grapple with a wide range of challenges that limit their ability to cultivate the crop profitably. Among the most pressing issues are the high cost of agricultural inputs such as fertilizers, improved seeds, and herbicides, as well as the inadequacy of extension services that should ideally provide farmers with vital technical guidance and support (Adedeji et al., 2023; Ayodeji et al., 2024). Additionally, limited access

to affordable credit facilities further compounds the problem, making it difficult for farmers to finance essential aspects of production. Another significant constraint is the volatility of market prices, which creates uncertainty and makes it challenging for farmers to plan effectively and maximize their returns.

In Edo State, particularly within Orhionmwon Local Government Area, a lack of proper record-keeping and financial analysis means that many smallholder farmers are not fully aware of how profitable or unprofitable their maize enterprises truly are. This knowledge gap not only affects their decision-making but also hinders efforts to adopt more efficient and profitable farming practices. Despite the strategic importance of maize in the region's agricultural landscape, the crop's production is still beset by several technical and environmental constraints. These include increasingly erratic rainfall patterns due to climate change, the high and often unaffordable cost of hybrid seeds and chemical fertilizers, as well as persistent threats from pests and plant diseases (Juochi et al., 2024).

Furthermore, the bulk of maize production in Edo State is carried out by smallholder farmers, who are responsible for over 80% of the total output (Igbokwuwe et al., 2023). Unfortunately, many of these farmers operate with

limited access to both the knowledge and financial resources required to invest in modern, productivity-enhancing technologies. This limited capacity significantly hinders their ability to expand production efficiently and attain higher profit margins. As a result, their net returns remain relatively low, and the overall profitability of maize cultivation continues to be undermined by systemic barriers that need to be addressed through targeted policy interventions, capacity-building efforts, and improved access to agricultural support services. To address these gaps, it is important to address the following research questions,

1. What are the socioeconomic characteristics of maize producers in Orhionmwon Local Government Area.
2. What are the cost, return and profitability of maize production in the study area.
3. What are the factors that affect the profitability of maize production in the study area.
4. What are the production constraints facing maize farmers in the study area.

### **1.3 Objectives of the Study**

The general objective of this study is to analyze the profitability of maize production in Orhionmwon LGA of Edo State. The specific objectives are to:

1. examine the socioeconomic characteristics of maize producers in Orhionmwon Local Government Area.
2. estimate the cost, return and profitability of maize production in the study area.
3. examine the factors that affect the profitability of maize production.
4. identify the production constraints faced by maize farmers in the study area.

### **1.4 Justification of the Study**

Maize plays a vital role in promoting food security and serving as a major source of income for rural households across Nigeria. As such, assessing the profitability of maize cultivation is a critical step toward improving the livelihoods of farming communities and ensuring sustainable agricultural development. Although numerous studies have been conducted to analyze the profitability of maize

production in various regions of Nigeria, there remains a noticeable gap in research that specifically addresses the situation in Orhionmwon Local Government Area of Edo State. Most of the existing literature tends to concentrate on wider geographical areas or adopt a generalized perspective on agricultural practices, often overlooking the localized experiences of maize farmers in specific communities. Recent studies by (Adedeji, et Al., 2023; Ayodeji, et Al., 2024; Jouchi, et Al., 2024 ) have shown that Maize production in Nigeria is generally profitable, with positive returns on investment, But there has been little focus on Orhionmwon. Understanding the profitability of maize production in this area is important to adding to the body of existing knowledge. This study will also aim to fill that gap by Analysing the profitability of maize production in the region. The findings of this study will help farmers make informed decisions regarding resource allocation and investment. It will also assist policymakers in designing targeted interventions to support maize producers. Furthermore, it will add to the body of empirical literature on maize farming in Nigeria.

## CHAPTER TWO

### LITERATURE REVIEW

**2.0** Maize (*zea mays*) is one of the most economically significant cereal crops in Nigeria, serving as a major staple for human consumption and livestock feeds, as well as a raw material for agro-industrial processing (Oladoyin, 2022). Its wide adaptability and relatively short maturity period make it a key crop for food security and income generation, especially among smallholder farmers (Mohammed, 2014). Nigeria remains the leading maize producer in sub-saharan Africa, with a reported production of approximately 12.8 million metric tons in 2020 (Santpoort, 2020)

#### **2.1 Theoretical Framework**

This study is underpinned by several theoretical frameworks that explain the dynamics between input use, resource efficiency, and economic returns in maize production. The primary theories and models include the **Profit Efficiency Theory**, the **Economic and Financial Rates of Return Models**, and the **Input-Output Production Function Model**. These frameworks provide a comprehensive understanding of how maize farmers allocate resources, respond to market and

environmental conditions, and ultimately achieve profitability.

### **2.1.1 Profit Efficiency Theory**

Profit Efficiency Theory provides a conceptual framework for understanding how agricultural producers, such as maize farmers, convert inputs into maximum possible profits under existing technological and resource constraints. It focuses on analyzing the gap between the actual profit earned by a farm and the potential maximum profit achievable when inputs are used optimally (Farrell, 1957; Battese and Coelli, 1995). In the context of maize production, this theory helps to identify inefficiencies arising from suboptimal input combinations, poor management practices, or limited adoption of improved technologies, all of which reduce profit levels.

The theory is grounded in the premise that farms operate under technical, allocative, and economic inefficiencies where technical inefficiency involves producing less output from a given set of inputs, allocative inefficiency arises from employing inputs in non-cost minimizing proportions, and economic inefficiency reflects overall profit shortfalls. Empirically, profit efficiency is often measured using stochastic frontier analysis (SFA), which separates random shocks from

inefficiency effects to better estimate true profit gaps among farms (Ngeno, 2024)

### **2.1.2 Maize Production Systems**

Maize production refers to the entire process of cultivating maize from land preparation and planting to harvesting and marketing. Factors influencing maize production include:

- Type of inputs (seeds, fertilizers, herbicides)
- Labor availability and cost
- Land size and ownership
- Climatic conditions (rainfall, temperature)
- Use of mechanization or traditional methods

These production factors have direct implications for yield levels, production costs, and ultimately profitability (Abubakar, 2023).

### **2.1.3 Cost Structure and Resource Allocation**

An essential part of profitability analysis is understanding the **cost structure**

involved in maize production. Costs are typically divided into:

- **Fixed Costs:** Land rent, depreciation of tools, etc.
- **Variable Costs:** Seeds, fertilizers, labor, transport, etc.

Efficient resource allocation, how inputs like land, labor, and capital are used determines productivity and income levels. Studies show that farmers who optimize their input use tend to earn higher profits (Aminu *et al.*, 2020).

#### **2.1.4 Socioeconomic Characteristics of maize Farmers**

#### **2.1.5 Age of maize producer**

Age plays a significant role in agriculture productivity and the adoption of innovative farming practices. Studies indicate that a substantial proportion of maize farmers in Nigeria are middle-aged. For instance, research in Osun State revealed that the mean age of maize farmers was approximately 45 years (Adedeji *et al.*, 2023). Similarly, a study in Akoko South West Local Government Area, Ondo State, found that majority of the maize farmers were aged 44 years (Oladoyin, 2022). The predominance of middle-aged farmers suggests a blend of experience and physical capability, which can positively influence maize

production.

### **2.1.6 Gender of maize producer**

Gender dynamics significantly impact agricultural activities in Nigeria. While both men and women engage in maize farming, certain studies highlight male dominance in specific regions. Bello *et al.*, (2020) reported that 90% of maize farmers in Kano State were males. In contrast, research in Osun state indicated a dominance of female maize farmers (Adedeji *et al.*, 2023). These variations underscore the importance of considering regional gender roles when developing agricultural policies and interventions.

### **2.1.7 Educational level of maize producer**

Educational attainment influences farmers' ability to adopt improved agricultural practices and adapt to climate variability. A study in Oyo state, 58.3% of male maize farmers attained secondary education (Oke *et al.*, 2022). Higher educational levels are associated with better access to information and resources, facilitating the

adoption of more profitable farming techniques.

### **2.1.8 Farm Size of maize producer**

Farm size is a critical determinant of production capacity. Studies have shown that farm size positively affects Maize output. Abubakar et al., (2021) found that larger farm sizes were associated with increased maize production. However, the average farm size among maize farmers is often 0.1-2hectares. For example, In Niger State, Nigeria, majority of farmers operated on 0.1-2 hectare of land (Abubakar et al., 2021), also (Oladoyin, 2022) reported that majority of farmers ondo state operate on a farm size of 1.5ha. Small farm sizes may limit economies of scale and mechanization, potentially affecting productivity.

### **2.1.9 Farming Experience of maize producer**

Experience in farming contributes to effective decision-making and adaptation strategies. The mean farming experience among maize farming households in Kano state was about 6-8 years (Muhammad et al., 2023). Extensive farming experience equips farmers with the knowledge to implement effective adaptation measures in response to profitability analysis of production...

## **2.2 Conceptual Framework**

### **2.2.1 Profitability in Agriculture**

Profitability refers to the financial gains obtained from farming activities after deducting all associated costs (Abubakar *et al.*, 2021). In the context of maize production, profitability is often evaluated using tools such as:

- Gross Margin Analysis
- Net profit
- Return on Investment (ROI)

Understanding profitability helps farmers and policymakers determine whether maize production is economically viable and sustainable (Dickson, 2022).

### **2.2.2 Constraints Affecting Profitability**

Despite the profitability potential, several constraints affect maize production profitability, including:

Fertilizer scarcity and high input costs

Inadequate rainfall and climatic variability

Limited capital and access to finance

Fluctuating market prices and poor storage facilities

Price fluctuations and transaction costs, (Adedayo, 2016) (Muyu *et al.*, 2025)

Addressing these factors can enhance profit margins and efficiency for maize farmers.

### **2.2.3 Profitability of Maize Value-Added Products**

Beyond raw maize production, processing maize into value-added products such as pap, parched corn, peeled parboiled corn, and corn beer has been demonstrated to be profitable. These products not only reduce post-harvest losses but also increase income for small-scale entrepreneurs. For example, in Mezam Division, Cameroon, economic profits from selected maize value-added products ranged from US\$3.39 to US\$44.24 per product per entrepreneur, with pap being the most profitable. A focus

on a few high-demand products rather than diversification was found to maximize profitability (Muyu et al., 2025).

### **2.2.4 Economic and Financial Rates of Return Models**

Economic rates of return models measure total resource productivity and economic efficiency in maize production by incorporating implicit and explicit costs, while financial rates of return models focus on cash profitability and investment appraisal based on actual financial transactions. Both models are essential for comprehensive profitability analysis in agriculture (Dickson 2022).

## **2.3 Analytical Framework**

### **2.3.1 Profitability Analysis of Maize Production**

#### **Cost Structure in Maize Production**

The costs involved in maize production typically include both variable and fixed costs. Variable costs mainly consist of labor, seeds, fertilizers, herbicides, transportation, and packaging. Research in Nigerian contexts has shown that labor accounts for approximately 40% of total production costs, with fertilizers contributing around 36%, seeds about 5%, herbicides near 10%, and other costs such as transportation and bags making up the remainder. For instance, in some Nigerian regions, the average cost of cultivating maize was about ₦52,000 per hectare (Bello et al., 2020), (Tahir et al., 2019). Similarly, a study in Oyo State, Nigeria, identified total costs (variable plus fixed) around ₦91,923 per hectare (Oke et al., 2022).

#### **2.3.2 Revenue and Gross Margin**

Revenue from maize production is generated primarily through the sale of maize harvests or value-added products derived from maize. Often, the average revenue per hectare significantly exceeds the total costs, leading to positive gross

margins—a key indicator of profitability. Field studies indicate average gross margins in the range of ₦84,500 to ₦201,331 per hectare in various Nigerian states, suggesting that maize farming is generally profitable at the farm level (Bello et al., 2020). For example, in Borno State, farmers earned a gross margin of ₦84,500 per hectare over costs of ₦52,000 per hectare, translating to an operating ratio of 0.38—values that denote sound profitability (Tahir et al., 2019).

### **2.3.3 Profitability Indicators**

Key ratios and indicators are used to assess profitability in maize production:

Gross Margin (GM): The difference between total revenue and total variable costs.

Net Farm Income (NFI): Total revenue minus total costs (fixed and variable).

Benefit-Cost Ratio (BCR): The ratio of total revenue to total costs; a BCR greater than 1 indicates profitability.

Return on Investment (ROI): Net Farm Income divided by total cost, expressing profitability relative to investment.

Studies like (Sanusi, 2015) and (Oke et al., 2022) have reported BCR values around 1.5 or higher and ROI demonstrating that farmers earn more than double per unit of

currency invested in maize farming. For example, in Niger State, Nigeria, an average net farm income of ₦48,109 per hectare and a profit percentage of 150% were reported—indicating that maize production returns cover costs with a significant margin.

#### **2.3.4 Profit Efficiency**

Profit efficiency refers to the extent to which maize farmers realize their maximum possible profit given available resources and technology. Research in Ghana and Kenya reveals that many smallholder maize farmers have significant inefficiencies, with average profit efficiency scores ranging from approximately 48% to 62%. This means there is often a substantial margin for improvement in resource use and management practices to maximize profitability (wongnaa et al., 2018), (Ngeno, 2024).

#### **2.3.5 Input-Output Production Function Model**

The Input-Output Production Function Model is a fundamental economic tool used to analyze the relationship between inputs employed in maize production (such as land, labor, seeds, fertilizer and agrochemicals) and the resulting output (quantity of maize produced). This model quantifies how changes in input levels affect maize

yield, crucial for profitability analysis and resource use efficiency.

A double-log input-output model applied in a small-scale maize farming area showed land size and labor as positively and significantly influencing maize output, with the model explaining over 80% of output variation, confirming the importance of these inputs to profitability (Bello et al., 2020).

In the context of profitability analysis, the input-output production function model helps determine which inputs are underutilized or overutilized by comparing marginal value products (MVP) to marginal factor costs (MFC). Inputs with MVP/MFC ratios greater than one signify underutilization, meaning increasing their use can enhance returns, a key management insights for maize farmers (Oke et al., 2022).

## **2.4 Empirical Review**

An empirical review of recent profitability analysis in maize production across Africa (2020–2025) indicates maize farming remains broadly profitable but constrained by input inefficiencies, market conditions, and socio-economic factors. Several recent studies, reflecting diverse agro-ecological and socio-economic contexts, provide robust evidence on determinants of maize profitability and profit

efficiency.

In Cameroon's Mezam Division (North-West Region), Ngala et al. (2025) examined maize value-added products profitability, finding a positive economic profit with products like pap yielding the highest returns (about US\$44 per entrepreneur). However, profitability was limited by fluctuating market prices, high production costs, limited finance access, and poor storage facilities. They reported a strong negative correlation between product diversity and profitability, suggesting focusing on fewer high-demand maize products maximizes profit (Ngala et al., 2025).

In Nigeria, studies in Oyo State and Bichi community confirmed maize production's profitability through positive gross margins and net farm incomes. Fertilizer, land, seed, and labor emerged as significant input factors positively influencing output and profit, though credit access was poor, limiting expansion potential and input use efficiency (Oke et al., 2022; Bello et al., 2020).

A Kenyan study using a true random-effects profit efficiency model found an average profit efficiency of 62%, indicating substantial room for profit improvement. Price of maize had a stronger elasticity effect on profits than input

prices. Larger farm and household sizes, plus male-headed households, were associated with reduced inefficiencies. Conversely, challenges like poor soil quality, maize diseases, and natural disasters increased profit inefficiency. The study recommended policies focusing on price stabilization, farm management training, and land use optimization to enhance profitability (Ngeno, 2024).

A comparative maize value chain analysis in Malawi and Mozambique highlighted that despite slightly higher maize productivity in Malawi, Mozambique's smallholder maize producers achieved higher net returns (~US\$178 per hectare) due to lower input costs, especially in fertilizer and seed. Labor costs comprised a significant share of total costs. The study advocated productivity enhancement and cost efficiency to boost competitiveness and profitability in both countries (Mango et al., 2024).

A continent-wide assessment stressed that Sub-Saharan Africa faces rising maize demand projected through 2050. Yield improvements and profitability gains are achievable via wider adoption of improved agronomic practices and enhanced input use efficiency, without cropland expansion. This underscores the economic potential of sustainable intensification in maize production systems (Aramburu et

al., 2024).

## **CHAPTER THREE**

### **3.0 METHODOLOGY**

#### **3.1 Study Area and Scope**

This study will be conducted in Edo State, which is located in the southern part of Nigeria with a geographical location of longitude  $6.6342^{\circ}$  N and latitude  $5.9304^{\circ}$ E. Edo State is known for its history and culture, and it covers a land area of about 17,802 square kilometers. The state is made up of 18 local government areas, which help in managing the different parts of the state. It shares its borders with a few other states in Nigeria. To the north and northeast, it is bordered by Kogi State. On the southern side, it shares a boundary with Delta State, while Ondo State lies to the west. The major focus of this study is Orhionmwon Local Government Area, which has a geographical location longitude  $5^{\circ}59'3''$  E and latitude  $6^{\circ}15'13''$  N or longitude of  $6.2535$  N and latitude of  $5.9841$  E about 5km southwest of the center, still within the LGA boundary and spans about 2,385 km<sup>2</sup> and has a population of about 271,800 National Bureau of Statistics (NBS, 2022), Its headquarter is in the town of Abudu. Orhionmwon is the largest local government area in Edo South Senatorial district. It was created during the days of the defunct Bendel State and

Uhunmwode local government was cut out in 1991. The local government is mainly known for its major participation in Agriculture amongst the many crops grown there, is maize which has a thriving agricultural industry.

It lies within the tropical rainforest zone and is characterized by fertile soil and favorable climatic conditions that support agricultural activities, particularly the cultivation of crops like maize, cassava, and yam. The LGA is predominantly rural, with a significant proportion of the population engaged in farming as their primary occupation. Key communities in Orhionmwon include Abudu (the administrative headquarters), Ugo, Urhonigbe, and Evboesi. The area experiences a bimodal rainfall pattern, which contributes to two major planting seasons, making it conducive for maize cultivation. Accessibility to markets, input supplies, and extension services varies across the LGA, which can influence the profitability of agricultural enterprises. The scope of this study is to examine the profitability of maize production in Orhionmwon, and how farmers tackle the limitations that they face.

### **3.2 Population of the Study**

The population for this study consisted of Maize farmers residing in Orhionmwon

Local Government Area (LGA) of Edo State, Nigeria.

### **3.3 Sampling Techniques and Sample Size**

A multi-stage sampling procedure will be employed to select a representative sample of maize farmers in Orhionmwon Local Government Area (LGA). Firstly, a purposive sampling technique will be used to select communities within the Orhionmwon LGA. This will be based on the researcher's knowledge of this community as maize producing community. In the second stage, 5 communities will be randomly selected using a ballot box method and finally a random sampling of 20 maize farmers from the list of registered 40 maize farmers then, giving a sampling size of 100.

### **3.4 Measurement of Variables**

#### **3.4.1 Dependent Variable**

Profitability of maize production (₦): This will be estimated using gross margin, net profit, or return on investment in naira made by each farmer.

#### **3.4.2 Independent Variables**

1. Cost of Inputs (₦): This will be measured in the total amount spent on seeds, fertilizers, labor, herbicides, pesticides, etc.

2. Farm Size (ha): This will be measured in area of land cultivated for maize
  3. Yield per Hectare (kg/ha) or tons/ha: Quantity of maize harvested per hectare
  4. Market Price of Maize (₦/kg or ₦/100kg bag): Average selling price of maize per kilogram or bag
  5. Access to Credit (₦): Binary (Yes = 1, No = 0) or amount of credit received in Naira
  6. Access to Extension Services (number of contacts): Binary (Yes = 1, No = 0); or frequency of contact (e.g., number of visits per season)
  7. Education Level (years): Number of years of formal schooling
  8. Farming Experience (years): Number of years engaged in maize farming
  9. Use of Improved Seeds or Technology(Dummy variables): Binary (Yes = 1, No = 0)
  10. Access to Markets (Kilometers or minutes/hours): Distance to the nearest market (in kilometers) or travel time.
- etc....

### **3.5 Data Collection**

This study will employ primary data collection methods to gather relevant

information from maize farmers in Orhionmwon Local Government Area, Edo State. The data will be collected through the use of a Structured questionnaire which will be administered to selected maize farmers. Where necessary, oral interviews will be conducted to complement the questionnaire data, especially for farmers with limited literacy. These interviews will be guided by the same questionnaire.

### **3.6 Analytical Technique**

**Objective 1:** will be achieved using descriptive statistics such as frequency counts, percentages, means, and standard deviations.

**Objective 2:** will be achieved using Gross Margin and Net Profit Analysis

Total Revenue (TR):

$$TR = \text{Output (kg or bags)} \times \text{Price per unit (₦)}$$

Total Variable Cost (TVC):

Sum of costs for seeds, fertilizer, labor, herbicides, pesticides, etc.

Gross Margin (GM):

$$GM = TR - TVC$$

Net Profit:

$$\text{Net Profit} = TR - (TVC + \text{Fixed Costs})$$

Profitability Ratios:

$$\text{Benefit-Cost Ratio (BCR): } TR / \text{Total Cost}$$

$$\text{Return on Investment (ROI): } (\text{Net Profit} / \text{Total Cost}) \times 100$$

**Objective 3:** will be achieved using Multiple Regression Analysis (e.g., OLS Regression)

$$\text{Profit} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_{10} X_{10} + \varepsilon$$

Where:

Profit = Dependent variable (net income or gross margin)

$X_1$ – $X_{10}$  = Independent variables

$X_1$  – Cost of inputs (₦)

$X_2$  – Farm size (ha)

$X_3$  – Yield per hectare

$X_4$  – Market price of maize (₦)

$X_5$  – Access to credit (Yes=1/ No=0)

$X_6$  – Access to extension services (Yes=1/ No=0)

$X_7$  – Education level (years)

$X_8$  – Farming experience (years)

$X_9$  – Use of improved seeds or technology (Yes=1/ No=0)

$X_{10}$  – Improved variety of maize (Yes=1/ No=0)

$X_{11}$  – Pest and diseases (Yes=1/ No=0)

$X_{12}$  – Access to markets (Yes=1/ No=0)

$X_{13}$  – Market union (Yes=1/ No=0)

$\varepsilon$  = Error term

**Objective 4:** will be measured using Likert Scale Ranking

Tools Used:

Mean score ranking using a Likert scale (e.g., 1 = Not serious, 2 = Moderately serious, 3 = Serious, 4 = Very serious)

Where:

r = Rating (1 to 4)

n = Total number of respondents

$$1 + 2 + 3 + 4 = 10 / 4 = 2.5$$

Bench mark =  $>2.5$  to constraints is significant

$< 2.5$  to constraints is insignificant

## **CHAPTER FOUR**

### **4.0 RESULTS AND DISCUSSION**

#### **4.1 Socioeconomic Characteristics of Respondents**

##### **4.1.1 Sex Distribution of Respondents**

The results in Table 1 indicate that 52% of maize farmers were male, while 48% were female. This suggests that maize farming in the study area is nearly gender-balanced, with both men and women actively participating in production activities. The slight male dominance implies that while men are more involved in land preparation and other field operations, women also play a significant role, particularly in planting, weeding, and post-harvest processing. A study by (Sadiq et, al., 2013) showed that 67% of the sample population are males while only 33% are female, therefore also showing the male dominance on maize farming

##### **4.1.2 Marital Status of Respondents**

The results in Table 1, show that 50.51% of respondents were married, 26.26% were single, 11.11% were divorced, and 12.12% were widowed. This implies that more than half of the maize farmers are married, which may contribute to family labor availability on the farm. Married farmers are also likely to be more stable and

committed to farming as a source of livelihood, using it to support household needs. A study by (Sadiq et, al., 2013) showed that 73.5% of the sample population are married and 26.5 of the sample population are not married, thereby implying that women farm only on their husband's farm land

#### **4.1.3 Educational Level of Respondents**

The results in Table 1 reveal that 10.20% of the farmers had no formal education, 18.37% had primary education, 52.04% had secondary education, and 19.39% attained tertiary education. This shows that most maize farmers in the study area are literate, with the majority attaining at least a secondary school level. The relatively high level of education among respondents suggests that they can understand and adopt improved farming technologies, maintain farm records, and make informed production decisions. A research carried out in Oyo state by Oladejo et al., (2012) found out that 57% of farmers in the study area attained secondary education, confirming the recent discovery.

#### **4.1.4 Nature of Farming**

The results show that 62.24% of respondents engaged in maize farming as a full-time occupation, while 37.76% were part-time farmers. This implies that maize

production is the main source of livelihood for most respondents in the study area. Full-time engagement in farming enhances commitment and allows farmers to dedicate more time and resources to improving productivity and profitability. Julius et al., (2012) also reported that majority of farmers engage in maize farming as a full time job rather than a part time job

#### **4.1.5 Source of Labour**

The results show that 5% of respondents relied solely on family labour, 18% used hired labour, while 77% used both family and hired labour. This indicates that the majority of maize farmers combine family and hired labour to meet their labour requirements. The use of both labour sources suggests that farmers optimize available family labour while supplementing it with hired workers during periods of peak labour demand, such as planting and harvesting. Folorunso and Bayo (2024). Stated that, of the 160.046 man-hours of labour utilized for maize production; 86.50% was contributed by family labour....

#### **4.1.6 Age Distribution of Respondents**

The results in Table 1 show that 43% of respondents were between 19–40 years, 40% were within 41–60 years, and 17% were above 60 years of age. This indicates

that the majority of maize farmers are in their economically active age range, suggesting high physical capability and productivity. The presence of younger farmers (below 40 years) also reflects a growing interest in maize farming among the youth, which is beneficial for sustaining agricultural production in the area. A similar study by Adedeji et al., (2023). Found that the average age of maize farmers in the study area was between 41-45, which is also in line with the recent discovery.

#### **4.1.7 Household Size of Respondents**

The study in Table 1, revealed that 54.67% of respondents had household sizes between 1–5 members, 44% had between 6–10 members, and only 1.33% had more than 10 members. This shows that most maize farmers live in households of moderate size. A moderate household size is advantageous as it ensures availability of family labour while keeping household expenditure manageable. Similarly Ibitola et al., (2019). reported that majority of farmers in Oyo state have an household size of 1-6

#### **4.1.8 Farm Size of Respondents**

The results in the Table, show that 75% of maize farmers cultivated between 0–2

hectares, 21% cultivated between 2.1–4 hectares, 3% cultivated between 4.1–6 hectares, and only 1% had farm sizes above 6 hectares, with a mean farm size of 1.9 hectares. This indicates that maize farming in the study area is dominated by small-scale farmers. The small farm sizes may limit the adoption of mechanization and large-scale production but allow for better management of available land and resources. Ibitola et al., (2019) also recorded that a slight greater proportion of farmers in Oyo have a farm size of 0-1 hectare.

#### **4.1.9 Farming Experience of Respondents**

The results show that 84% of the farmers had between 1–20 years of farming experience, 15% had 21–40 years, while only 1% had more than 40 years of experience, with an average of 13 years. This indicates that most maize farmers have considerable experience in farming, which could enhance their knowledge of local conditions, improve decision-making, and contribute positively to productivity and profitability. Ibitola et al., (2019). Also stated that 62.6% of farmers in Oyo state had a farming experience of 1-20 years, which is also in line with the current discovery.

**Table 4.1: Socioeconomic characteristics:**

<b>Variables</b>	<b>Freq.</b>	<b>Perc</b>	<b>Mean</b>
<b>Sex</b>			
Male	52	52.00	
Female	48	48.00	
<b>Age</b>			
19-40	43	43.00	
41-60	40	40.00	46
>60	17	17.00	
<b>Household size</b>			
1-5	41	54.67	
6-10	33	44.00	5
>10	1	1.33	
<b>Farming experience</b>			
1-20	84	84.00	
21-40	15	15.00	13
>40	1	1.00	
<b>Farm size</b>			
0.1-2	75	75.00	
2.1-4	21	21.00	1.9
4.1-6	3	3.00	

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>6	1	1.00
<b>Marital status</b>		
Married	50	50.51
Single	26	26.26
Divorced	11	11.11
Widowed	12	12.12
<b>Level of Education</b>		
Non formal	10	10.20
Primary	18	18.37
Secondary	51	52.04
Tertiary	19	19.39
<b>Nature of farm</b>		
Full time	61	62.24
Part time	37	37.76
<b>Source of Labour</b>		
Family	5	5.00
Hired	18	18.00
Both	77	77.00

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**Source: Field survey, 2025**

## **4.2. The Cost, Return and Profitability of Maize Production**

### **4.2.1 Cost structure of maize production**

The result in Table 2, presents the cost and returns analysis of maize farming in the study area. The results show that maize farmers incurred both variable and fixed costs during production.

The total variable cost amounted to ₦173,767.77, while the total fixed cost was ₦72,971.99, giving a total production cost of ₦246,739.76. This implies that variable costs constituted the larger portion of total production expenses, indicating that most of the resources used in maize production vary with the scale of output. Also in a research by Sanskala et al., (2022). The relative change in variable cost (568.19%) was found to be more as compared to fixed cost (427.94%) during maize cultivation. This is in line with the now present research.

Among the variable cost items, labour accounted for the highest expenditure (₦60,681.58), followed by the cost of maize seeds (₦33,663.27), herbicides (₦33,645.00), and pesticides (₦31,994.62). The lowest variable cost was recorded for fertilizer (₦13,783.30). The high labour cost reflects the labour-intensive nature of maize production in the study area, which often relies on manual farm operations.

For fixed costs, land accounted for the highest proportion (₦52,941.18), followed by the cost of a knapsack sprayer (₦13,402.53), cutlass (₦3,468.79), and hoe (₦3,159.49). This indicates that land acquisition or rental remains the most significant fixed cost item in maize farming.

#### **4.2.2 Revenue and Profitability of Maize Production**

The result in table 2, further shows that the total revenue realized from maize production was ₦791,470.20. When the total production cost (₦246,739.76) was deducted from total revenue, the farmers obtained a net profit of ₦544,730.44.

Similarly, the gross margin, which measures the difference between total revenue and total variable cost, was ₦617,702.43. This indicates that after covering all variable expenses, farmers still earned a substantial return, confirming that maize

farming in the study area is highly profitable. This aligns with the findings of Adedeji et al., 2023 on the discovery they stated that the indicator of profit was estimated using the income. From the study, the average total revenue estimated from the average output price was above 800,000 naira. Indicating a high profit in the study area.

The Return on Investment (ROI) was estimated at 3.21, meaning that for every ₦1 invested in maize production, farmers realized a return of ₦3.21. This high ROI demonstrates that maize production is an economically viable and lucrative enterprise for the respondents.

**Table 4.2: Cost and returns of maize farming**

<b>Variables</b>	<b>Cost</b>
<b>Variable costs</b>	
Maize seeds	33,663.27
Fertilizer	13,783.30
Herbicide	33,645.00
Pesticide	31,994.62
Labour	60,681.58
<b>Total Variable Costs</b>	<b>173,767.77</b>
<b>Fixed Costs</b>	
Cutlass	3,468.79
Hoe	3,159.49
Knapsack sprayer	13,402.53
Land	52,941.18
<b>Total Fixed Costs</b>	<b>72,971.99</b>
Total Cost	246,739.76
Total Revenue	791,470.20
Gross Margin	617,702.43
Net Profit	544,730.44
Return on Investment (ROI)	3.21

**Source: Computed from field survey, 2025**

### **4.3 Factors Affecting Maize Profitability**

The regression analysis results presented in Table 3 show the relationship between selected factors and maize profitability. The model has an  $R^2$  value of 0.9981 and an Adjusted  $R^2$  of 0.9977, indicating that 99.8% of the variation in maize profitability is explained by the variables included in the model. This suggests a very strong fit of the model for analyzing determinants of maize profit.

#### **4.3.1 Farm Size of Respondents**

The results in Table 3, indicate that farm size ( $p>0.05$ ) has a negative coefficient. This suggests that farm size has an inverse but insignificant effect on maize profit. In other words, increasing farm size does not significantly increase or decrease maize profitability in the study area. According to (Momoh et al., 2016). He found that farm size was a source of inefficiency in maize production. Only 26% of households produced at the optimal scale, suggesting that simply having more land does not guarantee higher profit efficiency. This aligns and supports the discovery.

#### **4.3.2 Maize Yield**

Maize yield ( $p<0.05$ ) has a positive coefficient. This indicates that higher yields significantly increase maize profit, highlighting the importance of productivity in

determining farm income. Ogundari (2010) Although focused on grains including maize systems, it reports that higher output levels directly raise profitability due to better use of fixed inputs., the aligns with the current discovery.

#### **4.3.3 Market Price of Maize**

The market price of maize ( $p < 0.05$ ) also has a positive and significant effect on profitability. This shows that higher market prices for maize substantially improve farm profit, making market conditions a critical factor in maize production income. A similar study by Oladejo & Adetunji (2012) found that selling price of maize is one of the strongest predictors of profit; increases in price significantly raise farmers' net income.

#### **4.3.4 Access to Credit**

Access to credit has a negative coefficient (-13.047) and a p-value of 0.578, suggesting that access to credit does not significantly affect maize profitability among the respondents. Oboh & Ekpebu (2011) reports that credit access alone does not guarantee higher profit, as poor loan utilization and high interest rates often weaken its effect. This is discovered to agree with the current discovery

#### **4.3.5 Age of Respondents**

Age shows a negative coefficient (-11.735) with a p-value of 0.992, indicating that farmer age does not significantly influence maize profit. Both younger and older farmers appear to achieve similar profitability levels. Ajah & Nmadu (2012) in their Research also found age did not significantly influence maize output or profitability, supporting your regression results.

#### **4.3.6 Farming Experience**

Farming experience has a positive coefficient (67.938) but is not statistically significant ( $p = 0.971$ ). This implies that while experience could theoretically increase profitability, in this study, it does not significantly determine maize profit. Adedeji et al. (2023) reported that farming experience did not significantly contribute to profitability due to modern production methods outweighing traditional knowledge which aligns with the current discovery.

#### **4.3.7 Constant Term**

The constant term (31.046) represents the expected profit when all independent variables are zero, though it is not statistically significant ( $p = 0.564$ ).

**Table 4.3: Regression analysis**

<b>Variables</b>	<b>Coefficient (Coef.)</b>	<b>t-value (t)</b>	<b>p-value (p(t))</b>
Farm size	-26.210	-0.59	0.562
Yield	0.835	12.61	0.000
Market price of maize	16.378	75.19	0.000
Access to credit	-13.047	-0.56	0.578
Age	-11.735	-0.01	0.992
Farming experience	67.938	0.04	0.971
Constant	31.046	0.58	0.564
<b>R<sup>2</sup></b>			0.9981
<b>Adjusted R<sup>2</sup></b>			0.9977

**Source: Field survey, 2025**

#### **4.4 Constraints Faced by Respondents**

Table 4 presents the major constraints encountered by respondents in the study area.

The constraints were measured using a four-point Likert scale, where 1 = Not a constraint, 2 = Mild constraint, 3 = Moderate constraint, and 4 = Severe constraint.

The mean values and standard deviations of each constraint are displayed in the table below.

The results in Table 4 indicate that respondents face multiple constraints in their farming operations, though the severity of these constraints varies. The most severe constraint identified was insecurity on farmland with a mean score of 3.24, suggesting that insecurity significantly disrupts farming activities, possibly by discouraging farmers from cultivating large areas or investing in long-term production.

This was followed by high labour cost with a mean score of 3.10, implying that the rising cost of hiring labour poses a serious challenge to farmers, especially those who rely on manual labour. Insufficient funds (mean = 2.89) also emerged as a serious constraint, indicating that limited access to capital restricts farmers' ability to purchase inputs, hire labour, and expand production.

Other moderately severe constraints included theft (mean = 2.79), poor access to credit (mean = 2.71), transportation constraint (mean = 2.70), unstable market prices (mean = 2.66), and insufficient land (mean = 2.58). These findings suggest that farmers in the study area experience a combination of financial, infrastructural, and market-related challenges that hinder effective production and profitability.

Constraints such as inadequate tools and equipment (mean = 2.42), flooding (mean = 2.46), and high cost of fertilizers/pesticides (mean = 2.49) were also reported but considered moderate. Meanwhile, pest and disease attacks (mean = 2.31), poor soil fertility (mean = 2.32), drought (mean = 2.07), and lack of improved maize varieties (mean = 1.93) were rated as less severe constraints. This indicates that while environmental and agronomic challenges exist, they are not perceived as the most pressing issues compared to socioeconomic and security-related problems.

The standard deviation values ranged from 0.75 to 1.10, indicating moderate variation in respondents' opinions. The relatively higher standard deviation recorded for poor access to credit (1.10) suggests differing experiences among farmers, with some having better access than others. Conversely, lower standard deviations (e.g., inadequate tools and equipment = 0.75) imply general agreement

among respondents about the severity of those challenges.

**Table 4.4: Constraint**

	<b>Variables</b>	<b>Mean</b>	<b>Standard Deviation</b>
1.	Insufficient funds	2.89	0.83
2.	Insufficient land	2.58	0.92
3.	Inadequate tools and equipment	2.42	0.75
4.	Insecurity on farmland	3.24	0.82
5.	Transportation constraint	2.70	0.78
6.	Theft	2.79	0.75
7.	High labour cost	3.10	0.88
8.	Flooding	2.46	0.88
9.	High cost of fertilizers/pesticides	2.49	1.05
10.	Poor access to credit	2.71	1.10
11.	Unstable market prices	2.66	0.98
12.	Pest and disease attacks	2.31	0.93
13.	Poor soil fertility	2.32	0.98
14.	Lack of improved maize varieties	1.93	0.96

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15.	Drought	2.07	0.86
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**Source: Field survey,2025**

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Summary of Findings**

The study examined the socioeconomic characteristics of maize farmers, the profitability of maize production, the factors influencing profit levels, and the major constraints affecting farmers in the study area. Results showed that maize farming is practiced by both men and women, with most farmers being married and having formal education, which enhances their capacity to adopt improved farming practices. The farming population was largely made up of active and economically productive adults, many of whom had several years of farming experience and operated small-scale farms supported by moderate household labour. The profitability analysis revealed that maize production is financially rewarding, as farmers were able to generate substantial revenue after covering both variable and fixed production costs, confirming maize farming as a viable livelihood source. Labour accounted for the highest share of production costs, reflecting the

labour-intensive nature of maize cultivation. Further analysis indicated that profitability was strongly influenced by maize yield and market price, which were the major determinants of income earned by farmers, while factors such as farm size, age, farming experience, and credit access showed no significant effect on profit levels. Despite the profitability of maize farming, farmers faced several constraints, the most severe being insecurity on farmland, which disrupts production and threatens safety. Other important challenges included high labour costs, insufficient funds, theft of farm produce, unstable market prices, poor access to credit, and transportation difficulties. Environmental challenges such as drought, pest attacks, and soil fertility decline were present but less severe compared to the socio-economic and security-related issues.

## **5.2 Conclusion**

Based on the findings, the study concludes that maize production in the study area is a profitable and economically viable enterprise, capable of generating substantial income for farmers. The respondents are mostly young and active, literate, and moderately experienced, which are favorable for agricultural productivity and innovation uptake.

Profitability is driven primarily by maize yield and market price, indicating that interventions aimed at increasing productivity and stabilizing maize markets would significantly enhance farmers' income. Despite the profitability, farmers still face critical challenges, particularly insecurity, high labour cost, insufficient funds, and limited access to credit, which constrain production efficiency and expansion.

Overall, improving security, reducing production costs, enhancing access to credit, and strengthening market systems would greatly support the sustainable growth of maize production in the study area.

### **5.3 Recommendations**

Based on the conclusions drawn from this study, the following recommendations are proposed:

#### **1. Improve Access to Quality Inputs**

Government and private sector stakeholders should ensure timely and affordable availability of inputs such as improved maize seeds, fertilizers, and agrochemicals.

Subsidy programmes and input distribution networks should be revitalized.

#### **2. Enhance Extension Services**

Extension agents should intensify training on improved maize production practices, including pest and disease management, soil fertility improvement, and yield-enhancing technologies.

### **3 Stabilize Market Prices**

Market information systems should be improved to ensure farmers are well informed about current prices. Policies aimed at reducing market price fluctuations, such as commodity boards and contract farming arrangements, should be explored.

### **4. Encourage Youth Participation**

Given the significant number of young farmers already involved, youth-targeted agricultural programmes and incentives should be expanded to sustain and grow interest in maize farming.

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**RESEARCH QUESTIONNAIRE**  
**DEPARTMENT OF AGRICULTURAL ECONOMICS AND**  
**EXTENSION SERVICES**  
**FACULTY OF AGRICULTURE**  
**UNIVERSITY OF BENIN,**  
**BENIN CITY, EDO STATE, NIGERIA.**

Dear Respondent,

This questionnaire is designed to elicit information on: **Profitability Analysis of Maize Production in Orhionmwon Local Government Area, Edo State, Nigeria.** The information you provide will be handled with strict confidentiality and the findings will be used solely for academic purposes. Your response will be highly appreciated.

**Uwayemwen Miracle OBOGHABOR**

**Researcher**

**A. Socioeconomic characteristics**

1. Sex: Male  Female
2. Marital Status: Married  Single  Divorced  Widowed/ Widower  Separated
3. Age: .....
4. Level of Education: No formal education  Primary  Secondary  Tertiary
5. Household size: Husband  Wife  Children  Others
6. Years of Experience in Maize Farming: .....
7. Farm Size : No. of portions  No. of acres  No. of hectares
8. Nature of Farming: Full time  Part time
9. Source of labor: Family  Hired  Both

**B. Budgetary/ Cost and Returns**

**Production Costs (per hectare)**

<b>Variable inputs</b>	<b>Quantity Used</b>	<b>Cost per unit</b>	<b>Total Cost</b>
Maize grains (kg)	Bags		
Fertilizer (kg)	Bags		
Herbicide (Liters)	Liters		

Pesticide (Liters)	Liters		
Others			

**Cost of labor for each farm operation**

<b>Operations</b>	<b>Amount paid</b>	<b>No. of portions/grains planted</b>	<b>No. of hours/ days worked</b>	<b>No. of workers</b>
Land clearing/portion				
Land tillage				
Planting/ maize grains				
Fertilizer application/portion				
Weeding/portion				
Herbicide application/portion				
Pesticide application/portion				
Harvesting/portion				
Others				
<b>Total</b>				

**Fixed Costs for the production period**

<b>Fixed inputs Equipment</b>	<b>Number of tools used in the farm</b>	<b>Cost for each tool</b>	<b>Useful life</b>	<b>Depreciated value</b>
Cutlass				
Hoe				
Knapsack Sprayer				
Machinery (if used)				
Land Rent				
<b>Total</b>				

**Quantity of Maize harvested/cost**

Area	Quantity (25 kg bags)	Quantity (50 kg bags)	Cost/bag	Total Cost
Portion				
Acre				
Hectare				

**C. Factors Influencing profitability of Maize production**

1. Maize variety planted: Improved  Local variety
2. Average yield (kg/Ha) Last season: .....
3. Fertilizer type: NPK  Urea  Organic
4. Cost per hectare: ₦.....
5. Pest/Disease Incidence: None  Mild  Severe
6. Selling price per kg: ₦.....
7. Primary buyer: Local market  Middlemen  Processor/Factory
8. Transportation cost to market (₦/kg):.....
9. Access to credit: Yes  No
10. Rainfall Adequacy: Too low  Adequate  Excessive
11. Farming experience (years): .....
12. Use of Irrigation: Yes  (Cost: ₦...../Ha) No
13. Soil fertility management: Crop Rotation  Fertilizer only  None
14. Land cost: Owned  Rented

**D. Production Constraints Faced by Maize Farmers**

For each of the following constraints, indicate the level of severity;

Constraints	Not severe	Mildly severe	Severe	Very severe
Insufficient Funds				
Insufficient Land				
Inadequate tools and equipment				
Insecurity on farmlands e.g Herdsmen				
Transportation Constraints				

Theft				
High Labor Cost				
Flooding				
High Cost of Fertilizers/pesticides				
Poor Access to Credit				
Unstable Market Prices				
Pest and Disease Attacks				
Poor soil Fertility				
Lack of Improved Maize varieties				
Drought				
Flood				

Other major challenges not listed above? (Specify)

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Additional Comments/Suggestions:

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