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Enquiry of modest maize (*Zea mays* L.) production in katsina local government area of katsina state, Nigeria

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Abstract
The study scrutinized modest maize production in Katsina Local Government Area of Katsina State, Nigeria. A two phase sampling method was implemented for the data assortment. Structured Questionnaires were circulated to the farmers. Descriptive Statistics, Gross Margin analysis, Net Farm Income and Return per Naira invested were used to analyse the data poised. The study discovered that bulk (80%) of the farmers were within the energetic occupied age, 94% of the farmers were males, 60% of the farmers were married, 62% of the farmers had one to ten persons as dependents, 64% of the farmers had basic education while 88% of the farmers had 1 -15 years of experience. Also 78% of them had farm sizes of between 1 and 2 ha. A Gross Margin of N343, 815.00 was gotten from a hectare of maize farm and a Return per Naira invested of 1.48. Cost of fertilizer constituted a larger fraction of the expenses of production, amounting to about N95, 000. The difficulties affecting maize production in the study area stayed as high inputs costs, pests and diseases, scanty storage services, insufficient capital, transport and reduced contact to credit services. The study, therefore, recommends that farmers should embrace cost operative methods of work like household workforce, mutual workforce and communal gathering in order to lessen the fee of work in maize production. Furthermore, inputs ought to be made obtainable to farmers at supported rates by appropriate agencies.

Keywords: constraints, maize, profitability, production, modest

Introduction

Farming in Nigeria is controlled by modest farmers who are involved in the production of the bulk of food supplies of the country. Small-holder farmers are viewed as persons with landholdings of less than 10 hectares. Their collections make up about 80% of Nigeria's farming populace, they are accountable for 80% – 90% of food production in Nigeria and yet they are the humblest groups in the country [8]. Maize is one of the foremost crops grown with a valuable source of protein, carbohydrates, vitamin B, iron, and minerals in northern Nigeria [1]. It emerges as the world's best provider of calorie, supplying about 19.5%. Maize supplies more calories than rice and wheat. It has a caloric supply of about 16.5% and 15.0% correspondingly [17].

In Nigeria, poultry producers use maize to prepare feeds for poultry and thousands of people also use maize to serve as their milk [5]. This is why Nigeria's demand for maize is growing steadily [8]. In 2017 Food and Agricultural organization reported that the mean maize output in Nigeria from 1990 to 2015 was nearly 4.7 million tons, but production increased to 10.5 million tons in 2017. Output rose from 8.7 percent to 22 percent, respectively from 1980 to 2003 [6]. The FAO also reported that maize production in Nigeria accounted for 61 percent of the farmland. [13] recognized that growing maize by modest farmers can stunned hunger in the families and the summative effect could twofold food production in Africa. As at 2017 Maize intake in Nigeria stood at 10.9 million metric tons. Consumers of maize alone or in mixture with other foods as staples or snacks in Nigeria comprised but are not restricted to Ajepasi, Akamu, Akple, Kunu, Ogi, Donkunnu, Maasa, Couscous, Gwate, Nakia, Egbo, Abari, Donkwa, Aadun, Kokoro, Elekute, and Tuwo [14]. Maize is one of the main cereal crops of West Africa, and the most important cereal food crops in Nigeria. Maize is produced in all agro-ecological zones of Nigeria. It is an important cereal being cultivated in the rainforest and the derived savannas zones of Nigeria [16]. It is a very important worldwide crop used for both food and industrial purposes such as raw materials for many agro industries.

Rural families have remained to face poor economic circumstances which affect their living standards and production situation. The state has an average annual rainfall of 300-700mm. More than seventy (70) percent of the population in Katsina State are farmers and largely small scale farmers [10]. Verily farming activities in Katsina State have contributed immensely for economic development and social well-being of its citizens. Despite the high percentage of modest farmers in the study area, farmers could not produce sufficient food to meet domestic demands. In a bid to find out the profitability of maize production of modest maize farmers, it is then essential to have an in-depth study on issues. This study is aimed at exploring modest maize production in Katsina Local Government Area of Katsina State. It described the socio-economic characteristics of maize farmers, determined the relationship between the socio-economic characteristics of the farmers and their output, evaluated the profit margin associated with maize production and identified the constraints being faced by modest maize farmers in the study area.

Materials and methods

The study was shepherded in Katsina Local Government Area, Katsina State of Nigeria. The area is found in the North-western part of Nigeria; it has inhabitants amounting to 363,943 persons [12]. The persons of the area are customarily farmers. They also engage themselves in trade and Government toil. Crops developed typically in the area are Cotton, Millet, Groundnut, Sorghum, Maize, Potatoes and Cowpea. The species of livestock raised in the region comprise Cattle, Sheep, Goat and Poultry. Katsina is a city

(previously a city-state), and a local Government area in Northern Nigeria, and it is the capital of Katsina State. Katsina is sited some 160 miles east of Sokoto State; it is 84 miles northwest of Kano and neighbouring the border of Niger Republic. The city is the heart of an agricultural region producing Groundnuts; Cotton, Hides, Millet and Guinea corn. Furthermore it has mills for producing Peanut oil and steel and its inhabitants are mostly Muslims and are primarily from the Fulani/Hausa ethnic groups. Katsina Local Government area covers 142 km². It was bounded by city barriers 13 miles (21 km) in length, which are no longer in existence. It has an average precipitation ranging from 600-700mm annually [11]. Mostly, climate varies significantly according to months and seasons. The two weathers are: a cool dry season from December to February; a hot dry season from March to May; a warm wet season from June to September; a less marked season after rains during the months of October to November, characterized by decreasing rainfall and a gradual lowering of temperature. The minimum and maximum temperatures of Katsina Local Government area are 21ºC and 35ºC respectively [11]. Modern day Katsina has many information technology companies, providing internet access to the people of Katsina.

Sample Size and Sample Procedure

The persons for the study are modest maize farmers in Katsina Local Government Area of Katsina State. A multi-phase sampling method was embraced for this study. In the first stage, four villages (Shinkafi, Makera, Dannabaso and Bakuru) were purposively selected from the Katsina Local Government area. The second phase involved the random choice of Sixteen (16) modest maize farmers from Dan-Nabaso, Makera and Bakuru and Thirty Four (34) were selected from Shinkafi community to give 50 maize farmers.

Data Collection

Equally primary and secondary data were used for this study. Primary data were composed with the help of structured questionnaires which were circulated to the farmers.

Data Analysis

Descriptive statistics such as (Frequencies and Percentages) were used to achieve the first and the last objectives. While, Gross Margin, Net Farm Income and Return per Naira Invested analysis were embraced in determining the profitability of maize production. The models are itemized as follows:

1. Descriptive Statistics

2. Gross Margin Analysis

Gross margin was used to appraise the cost and returns linked with maize production in the study area. It is therefore conveyed as follows:

GM = GI -TVC

Where: GM = Gross Margin

GI = Gross Income

TVC = Total Variable Cost

3. Net Farm Income (NFI)

NFI = GM-TFC

Where

NFI = Net Farm Income

GM = Gross Margin

TFC = Total Fixed Cost

4. Return per Naira Invested

Ret/N = GM/TC

Where

Return/N = Return per naira invested

GM = Gross Margin

TC = Total Cost

Results and Discussions

Table 1: Background Features of Maize farmers

Variables	Categories	Frequency	Percentage
Age (Years)	20 – 30	29	58
	31 – 40	11	22
	41 – 50	7	14
	51 and above	3	6
	Total	50	100
Gender	Male	47	94
	Female	3	6
	Total	50	100
Marital Status	Married	30	60
	Single	20	40
	Total	50	100
Family Size	1 – 5	21	42
	6 – 10	10	20
	11 – 15	13	26
	16 and above	6	12
	Total	50	100
Educational Level	Qur'anic	18	36
	Primary	15	30
	Secondary	12	24
	Tertiary	5	10
	Total	50	100

Source: Field Survey, 2022

Table 1 show that Eighty percent (80%) of the farmers were between 20 years to 40 years, of age while 20% of the farmers were beyond 40 years. The mean age of the farmers was 30 years. This denotes that maize farmers in the area were youths and can supply an exceptional amount of work. This is in similarity with the discoveries of [9], who determined the mean age of maize farmers in Ikara Local Government Area of Kaduna State, Nigeria to be about 40 years. This displays that the farmers were young and are anticipated to have more energy with to practice maize farming.

It also shows that majority of the farmers (94%) were males. This indicates that farming in the study area was a male conquered activity. Another reason to this was that culture and religion have vested the responsibilities of females on males. This agrees with the discoveries of [4] where they reported that bulk (81%) of modest maize farmers in Bichi Local Government Area of Kano State, Nigeria were males.

The table also revealed that, a hefty section (60%) of the modest maize farmers in the study area were married while 40% were not married. Married farmers may incline to be more devoted and perhaps have a larger overbearing for advanced productivity in order to meet family burdens for food, income and other things. This coincided with the findings of [7] in his study, where he revealed that 80% of the respondents were married. It also matched with the findings of [8].

Similarly it shows that bulk (62%) of the farmers had a family magnitude of between one and ten (10) people. This settles with the findings of [4] and [15] who conveyed that majority (70% and 91%) of the maize farmers in Bichi

Local Government Area of Kano State, Nigeria and Bakori Local Government Area of Katsina State, Nigeria had number of dependents ranging from 1-10 persons.

The table also shows that 64% of the farmers had basic education, while 36% had Qur'anic learning. This implies that the majority of the farmers had one form of education. [3] institute that education has the propensity to meaningfully increase agricultural productivity.

Table 2: Years of experience and Farm size

Variables	Categories	Frequency	Percentage
Years of Experience	1 – 5	21	42
	6 – 10	18	36
	11 – 15	5	10
	16 and above	6	12
	Total	50	100
Farm Size (Ha)	<1	12	24
	1 – 2	27	54
	3 – 4	7	14
	5 and above	4	8
	Total	50	100

Source: Field Survey, 2022

Table 2 shows that 88% of the Farmers had one to fifteen years farming experience, whereas 12% of the farmers had sixteen years and above (16> years) farming experience. This means that greatest number of the farmers do have enough understanding in maize farming. This coordinated with the findings of [8]. The table also shows that 54% of the farmers had between one and two hectares (1 - 2ha), however 8% of the farmers had 5 and above hectares farm size. This is in line with the findings of [3] where they reported 60% of the respondents have one to two hectares.

Table 3: Analysis of Costs and Returns per Hectare

Variables	Cost /Hectare(N)
A. Returns	
Revenue from Fresh Cobbs	69,600
Revenue from Dried Seeds	459,415
Revenue from Maize Husk	16,000
Gross Income	545,015
B. Variable Costs	
Seeds	6,000
Fertilizer	95,000
Labour	65,200
Herbicides	20,000
Insecticides	5,000
Transportation	15,000
Total Variable Cost (TVC)	201,200
C. Fixed Costs	
Land Rent	15,000
Interest on loans	2,800
Farm Tools	12,000
Total Fixed Costs (TFC)	29,800
D. Total Cost	
(TVC+TFC)	201,200+29,800 = 231,000
GM = GI – TVC	545015 – 201,200 = 343,815
NFI = GM – TFC	343,815 – 29,800 = 314,015
Return Per Naira (Ret/N) = GM/TC	1.48

Source: Field Survey, 2022

Profitability of Maize Production

The result identified total revenue of N545, 015.00 was made per hectare while the Total Variable Costs acquired were N201, 200 per hectare. The Gross Margin was estimated at N343, 815.00 per hectare. The Total Fixed Costs and the Total Costs were assessed at N29, 800.00/ha and N231, 000/ha respectively. Also the result shows that a Net Farm Income of N314, 015 per hectare whereas the return per naira invested was 1.48. These outcomes designate that maize production is a lucrative endeavour in the study area. This outcome is in line with the discoveries of [4]. The result also displays that Fertilizer cost constituted a larger fraction of the costs sustained in maize production by the farmers.

Table 4: Constraints to Maize Production

Constraint	Frequency	Percentage	Rank
High Cost of Labour	40	80	6th
Pest and disease control	46	92	3rd
Inadequate capital	45	90	5th
Scanty storage facilities	33	66	8th
Transportation Hitches	47	94	2nd
Poor access to credit services	46	92	3rd
High cost of inputs	48	96	1st
Stealing	38	76	7th
Inadequate information	30	60	9th
Shared labour	29	58	10th

Source: Field Survey, 2022

Constraints to modest maize production in the study area

Table 4 revealed that 96% of the farmers settled that high cost of inputs was the foremost constraints that affect their production actions. [2] conveyed similar findings. These findings also agree with [4].

Conclusion

The study discovered that majority of the farmers were males and they were fairly educated. However the business was confronted with constraints such as high costs of inputs, poor transportation, high cost of hired labour, lack of extension services and inadequate supply of agrochemicals and fertilizer, incidence of pests and diseases infestation plus inadequate capital and credit facilities, but despite of these constraints, the maize farmers were still able to made profit.

Recommendations

The following recommendations should be booked into consideration

1. Loans ought to be made accessible to the modest maize producers so as to can magnify their business and take benefit of significant production.
2. Inputs ought to be made open to farmers at backed rates and at auspicious timing matching with critical production phases.
3. Farmers ought to embrace cost operative methods of workforce like household labour, mutual labour and communal cropping in order to lessen the cost of work in maize production.

References

1. Abdulaleem MA, FM O, Kolawole AO. Analysis of Costs and Returns on Maize Production among Small-scale Farmers in Osun State Nigeria. Adult Education,2017:26:14-4.
2. Adams OK. Economic analysis of maize production in Kano State. Journal of Poverty, Investment and Development,2018:44:53-56.
3. Adenuga AH, Muhammad-Lawal A, Rotimi OA. Economics and Technical Efficiency of Dry Season

Tomato Production in Selected Areas in Kwara State, Nigeria. Agris on-line Papers in Economics and Informatics,2013:5 (1):11–19.
4. Bello NA, Frederick KY, Nazeer A, Ibrahim UM. Profitability of Small-Scale Maize Production in Nigeria: A Case Study of Bichi Local Government Area, Kano State-Nigeria. EJFOOD, European Journal of Agriculture and Food Sciences,2020:2(5):1-5.
5. Faostat. FAO Statistical Database (online). Food and Agricultural Organization of the United Nations, 2018. Rome. http://faostat.fao.org
6. FAO, GIEWS - Global Information and Early Warning System: Country briefs, 2017. Nigeria http://www.fao.org/giews/countrybrief/country.jsp?code=NGA (8)
7. Garba N. Economic Analysis of Pepper Marketing in Katsina Metropolis, Katsina State Nigeria. A paper Presented at the 1st Seminar Organized by College of Agriculture, Hassan Usman Katsina Polytechnic Katsina 7th – 8th July, 2020.
8. Girei AA, Saingbe ND, Ohen SB, Umar KO. Economics of Small-Scale Maize Production in Toto Local Government Area, Nasarawa State, Nigeria. Agrosearch,2018:18(1):90–104.
9. Issa FO, Kagbu JH, Abdulkadir SA. Economic factors influencing farmers adoption of improved maize production practices in Ikara Local Government Area of Kaduna State, Nigeria. Agrosearch,2016:16(2):15 - 24.
10. Katsina State Investor's Handbook. Katsina State Government Printing Press, 2016.
11. Najamuddeen G, Saulawa MA, Ukashatu S, Kyiogwom UB, Ala AL. Structure and conduct of beef marketing in Sokoto metropolis, Sokoto State, Nigeria. Scientific Journal of Biological Sciences,2012:1(3):81-85.
12. National Population Commission-(NPC) projection (2022)
13. Ogunsumi, L.O., Ewuola, S.O. and Daramola, A.G. (2018).Socio-economic Impact Assessment of Maize Production Technology on Farmers' Welfare in Southwest, Nigeria. Journal of Central European Agriculture, 6 (1): 15–26.
14. Olaniyan, A. B. (2015). Maize: Panacea for hunger in Nigeria. African Journal of Plant Science, 9 (3): pp. 155 – 174. Accessed May 2, 2018 from http://www.academicjournals.org/article/article1427453934_OLANIYAN.pdf
15. Sadiq, M.S., Yakassai, M.T., Ahmad, M.M., Lakpene, T.Y., and Abubakar, M. (2013). Profitability and Production Efficiency of Small-Scale Maize Production in Niger State, Nigeria. IOSR Journal of Applied Physics (IOSR-JAP), 3 (4): 19–23
16. Tijani AA, Oshotimehin KO. Economic of Pesticides use among Maize Farmers in Edo State. Sciences Insinet Publication, 2014, 129-132.
17. World Atlas. Most Important Staple Foods in the World. Accessed, 2023. from ttps://www.worldatlas.com/articles/most-important-staple-foods-in-the-world.html.