



Research Article

ECONOMIC ANALYSIS OF GROUNDNUT PRODUCTION IN BIU LOCAL GOVERNMENT AREA OF BORNO STATE, NIGERIA

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ABSTRACT

The study examined the economic analysis of groundnut production in Biu Local Government area of Borno State. Purposive and random sampling techniques were employed to select 120 respondents. The tools for collection of primary were structured questionnaires. The data were analyzed using both descriptive such as percentage and frequency and inferential statistics. These included percentage, frequency and farm budget model. Gross margin analysis was used to estimate cost and returns from groundnut production in the study area. The study revealed that the average cost of production per hectare was ₦155, 228.00. The study further revealed that the average revenue, gross margin and net farm income per hectare were ₦86, 853.80, ₦35, 775.00 and ₦31, 625.00 respectively. The result shows that the return to naira invested was 0.57 which implied that for every naira invested in groundnut production in Biu LGA, a farmer will make a profit of ₦0.57. The problems encounter by the farmers included lack of capital, lack of improve seed, and lack of extension services. The study concluded that groundnut farming is profitable in the study area. It is recommended that farmers should be encourage to procure their inputs from government agencies, extension services should be made available to farmers to get more profit and improve seed should be made available and affordable to the farmers.

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INTRODUCTION

Groundnut is one of the most important oil seed crop in the world. It contains 48-50% oil, 26-28% protein and 11-27% carbon hydrates, mineral and vitamins. Groundnut is either cultivated sole or mixed with other crops (mixed cropping) like maize, sorghum, cotton, Ben-seed (sesame) sunflower etc. 55% of the groundnuts producer in Nigeria practiced mixed cropping. Groundnut is grown on 26.4 million hectares worldwide, with the total production of 37.1 million metric tons and average production of 1.4 metric tons per hectare (FAO, 2011). Groundnut is the 13th most important food crop and 4th in oil seed crop of the world. Groundnut seeds (kernels) contain 40-50% of fats, 20-50% and 10-20% carbohydrates (FAO 2009). Groundnut seeds or nuts are nutritional source of vitamin E, Niacin, Falacin, calcium, phosphorous, magnesium, zinc, iron, riboflavin, this amino and potassium (FAO, 2009). Groundnut kernels are consumed directly raw, roasted or boiled. The extracted oils from kernels are used as culinary oil (suitable for cooking) and also by products of the extracted oil and groundnut haulms are used as livestock feeds. It is an industrial raw material (oil, cake and fertilizer) and as such the uses of groundnut plants make it an excellent cash crop for domestic markets as well as foreign trade for several developing and

developed countries (FAO, 2009). Despite its importance, there is still the insufficiency of the crop due to some problems that hinder its productivity. This problem is attributed to rapid urbanization, low per capital income, poor storage, inadequate transportation and marketing facilities as well as non-challent attitudes to agriculture among others (Gulati, 2000 as cited in Girei et al. 2013). Eyo (2004) further noted that, small operators in Nigerian agriculture face pure competition both at production and marketing stages. This study, therefore, examined the economic analysis of groundnut production in Biu local government area of Borno State, Nigeria. The specific objectives are to:

- Examine the socio-economic characteristics of the respondents.
- Determine the profitability of groundnut production in the study area and
- Identify constraints of groundnuts production in the area.

Research Hypothesis

H₀: Groundnut production is not profitable.

MATERIALS AND METHODS

Study Area

The study area is Biu local government area of Borno State, Nigeria. Biu division is situated in the North-East corner of

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Nigeria and within Borno province as shown in the maps in appendix I and II. It lies between latitudes 10° and 11°, 15° and longitudes 11° 30 and 13°. Biu LGA covered and area of 3,764m², the population figure of Biu LGA according to the 2006 census stood at 176,072. Major tribes are Babur (Babur) and bura. The people of the area are predominantly farmers and the major crops grown include maize, guinea corn, rice, groundnut, soya beans, beans, cassava, cocoa yam and sweat potatoes.

Sampling Techniques and Sampling Size.

The target population for the research was the groundnut producers. A purposive sampling technique was used in selecting twelve (12) villages because of the concentration of groundnut producers in the study area, and these are Biu, Mbulamel, Tabra, Galdimari, Dukja, Nasarawa, Miringa, Madlau, Garubula, Birikuthi, Bubalwada and Yawi. Ten respondents were randomly selected from each village and this give a total sample of 120 respondents for the study.

Method of Data Collection and Analysis

Primary and secondary data were used for this study. Structured questionnaires were used in collecting information from the individual respondents in the study area. Data were collected on socio – economic characteristic, price of groundnut per bag (100kg), cost of seeds, cost of fertilizer and agro chemical, yield of groundnut and information concerning problems encountered in the production of groundnut. Secondary data collected from relevant sources like Biu LGA and Borno state ADP. Descriptive statistics such as frequency and percentage as well as Gross margin analysis were used in analyzing the data.

Gross margin analysis

The gross margin analysis was used to estimate the cost and return per hectare per groundnut farmer.

The GM is defined as:

$$\text{Gross Margin} = \text{TR} - \text{TVC} \dots\dots\dots (1)$$

$$\text{NFI (Net Farm Income)} = \text{GM} - \text{TFC} \dots\dots\dots (2)$$

Where:

- GM = Gross Margin
- TVC = Total Variable Cost
- TFC = Total Fixed Cost
- NFI = Net Farm Income
- TR = Total Revenue.

RESULTS AND DISCUSSION

The socio economic characteristics of the respondents play a significant role in creating awareness and knowledge in determining their farming pattern. Table 1 shows that majority of the respondents are in the age bracket of 41-50 years which constitutes 30.9% of the total respondents and it follows by age bracket of 20-30 years which accounted for 19.2%. Those respondents who are 70 years and above constituted about 0.8% of the total respondents. This implied that majority of the respondents are within the active productive age group and their productivity is expected to be high. The result is in agreement with Oboh (2007). The result also shows that majority of the respondents (45.8%) have household size of 6-10 in the study area. Thirty five percent of the respondents have family size of 5 and above. The respondent with household size of 11 – 15 accounted for 15.9%, while only 3.3% have household size of

15 and above. The study revealed that study area has relatively large household size. The table further revealed that majority of the respondents (35%) completed primary school and followed by those who have never gone to school accounted for 25.8%. Those respondents who completed tertiary institution accounted for 20% and only 19.2% completed secondary school. The result shows that majority of the respondent (68.3%) have farm size of 2 hectares and below and followed by those respondents (30.4%) that have farm size between 3 – 5ha. Only 0.8% of the respondents have farm size above 8ha. The mean farm size stood at 2.11ha. This implied that the study area is dominated by small scale farmers. It shows those groundnut farmers that have five years of experience were the majority (31.7%). Those with 6-10 years of experience accounted for 21.6% of the total respondents. Fifteen percent of the respondents have 16-20 years of experience in groundnut production. Thirteen of the respondents (10.8%) have greater than 25 years’ experience in groundnut production.

Table 1. Socio – economic characteristics of the respondents

Age (Years)	Frequency	Percentage
20-30	23	19.2
31-40	17	14.1
41-50	37	30.9
51-60	33	27.5
61-70	9	7.5
>70	1	0.8
Total	120	100
Mean	45.48	
S.D	11.975	
Household Size		
≤5	42	35
6-10	55	45.8
11-15	19	15.9
>15	4	3.3
Total	120	100
Mean	7.27	
S.D	4.472	
Educational Level		
Never gone to school	31	25.8
Completed primary school	42	35.0
Completed secondary school	23	19.2
Completed tertiary institution	24	20.0
Total	120	100
Mean	1.33	
S.D	1.072	
Farm Size		
≤ 2	82	68.3
3-5	37	30.4
6-8	00	00
>8	1	0.8
Total	120	100
Mean	2.11	
S.D	1.228	
Farming Experience		
<5	38	31.7
6-10	26	21.6
11-15	17	14.2
16-20	18	15.0
21-25	8	6.7
>25	13	10.8
Total	120	100
Mean	12.68	
S.D	9.653	

Source: Field Survey, 2014

Table 2 shows that majority of the farmers (25.8%) obtained groundnut yield of 601-800kg per hectare and followed by those respondents (24.2%) who obtained groundnut output of 801-1000kg per hectare. Those respondents who obtained groundnut yield of 401-600kg per hectare accounted for 21.7% of the total sample. Only 3.3%

of the respondents have groundnut yield of greater than 1600kg per hectare. The mean groundnut stands at 789.58kg per hectare.

Table 2. Distribution of respondents by groundnut output per hectare

Crop Output (Kg)	Frequency	Percentage
200-400	21	17.5
401-600	26	21.7
601-800	31	25.8
801-1000	29	24.2
1001-1200	4	3.3
1201-1400	1	0.8
1401-1600	5	4.2
>1600	4	3.3
Total	120	100
Mean	789.58	
S.D	600.815	

Source: Field Survey, 2014

Table 3 shows that average yield of the groundnut per hectare in the study area was 789.58kg per hectare and the value stood at ₦86, 853.80. The gross margin analysis for groundnut production shows that the total variable cost of production per hectare was ₦51, 078.00 which accounted for 92.4% of the total cost of groundnut production. The average fixed cost was ₦4, 150 which account for 7.6 % of the total cost of production. Thus the total cost of production stood at ₦55, 228.00. The table further revealed that the total revenue, gross margin and net farm income were ₦86, 853.80, ₦35, 775.00 and ₦31, 625.00 respectively.

The result shows that the return to naira invested was 0.57 which implied that for every naira invested in groundnut production in Biu LGA a farmer will make a profit of ₦0.57. This result is in agreement with Girei *et al* (2013) who reported and return to naira invested of 0.47 in Adamawa State, Thus groundnut production is a profitable venture in the area and therefore attractive. The study is in agreement with Taru *et al*. (2008) and Ani *et al*. (2013) who reported that groundnut production in profitable in Adamawa and Benue States respectively.

Table 3. Averagecost and returns of groundnut production per hectare

Variables	Value (₦)
Costs of seeds	5, 340.00
Cost of labour	20, 688.00
Cost of fertilizer	20, 650.00
Cost of herbicides	4, 400.00
Total Variable Cost (TVC)	51, 078.00
Total Fixed Cost (TFC)	4, 150.00
Total Cost of Production (TCP)	55, 228.00
Returns	
Crop Output	789.58kg
Price/Kg	110.00
Total Revenue (TR)	86, 853.80
Gross Margin (GM) (TR – TVC)	35, 775.80
Net Farm Income - NFI (GM – TFC)	31, 625.80
Return to Naira Invested (NFI/TCP)	0.57

Source: Field Survey, 2014.

Table 4 shows that majority of the respondents (25%) indicated that lack of capital was the constraint encountered in groundnut production. Due to lack of capital farmers were not able to adequately purchase all the required inputs. Lack of improved seed is one of the problems encountered by the respondents as indicated by 29 farmers representing 24.2% of the total sample.

Lack of extension and fertilizer were some of the problem encountered representing 17.4% and 166.5% of the respondents respectively the result further indicated that some of the problem encountered by the respondents included lack of agrochemical and markets representing 9.2% and 7.4% of the total sample respectively.

Table 4. Problems encountered in groundnut production in Biu LGA, Borno State

Problem	Frequency	Percentage
Lack of improved seeds	29	24.4
Lack of agrochemicals	11	9.2
Poor Marketing	9	7.4
Lack of fertilizer	20	16.6
Lack of capital	30	25.0
Lack of extension and training	21	17.4
	120	100

Source: Field Survey, 2014.

Conclusions

The study found out that the respondents were within the active working group (31-50 years) and were all small scale farmers. The study also revealed that the average groundnut yield per hectare per farmer was 789.58kg and also revealed that the average revenue, gross margin and net farm income per hectare were ₦86, 853.80, ₦35, 775.00 and ₦31, 625.00 respectively. The result shows that the return to naira invested was 0.57 which implied that for every naira invested in groundnut production in Biu LGA a farmer will make a profit of ₦0.57. The problems encountered by the respondents included lack of capital, lack of improved seeds, lack of extension and training.

Recommendations

Based on the result obtained, the study recommends the following:

- Improved inputs such as seeds should be made available to farmers at affordable price by relevant stakeholders to increase of groundnut production in Biu local government area and
- The study also recommends that government and private sector should make available and affordable soft microcredit or loan for the small scale farmers in Biu local government area. The loan should be given at the right time.

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