

Analysis of Profitability of Groundnut Production in Northern Part of Taraba State, Nigeria

G.B. Taphee

Dept. of Agricultural Extension & Management,
College of Agriculture, Jalingo Taraba State,
Nigeria.

Dengle Yuniyus Giroh

Dept. of Agricultural Economics & Extension,
Moddibo Adama University of Technology Yola,
Adamawa State, Nigeria

A.A.U. Jongur

Dept. of Agricultural Economics & Extension,
Moddibo Adama University of Technology Yola,
Adamawa State, Nigeria

Ephraim Ibrahim Jen

Dept. of Agricultural Extension & Management,
College of Agriculture, Jalingo Taraba State,
Nigeria

ABSTRACT

The study was carried out to analyse the profitability of groundnut production in Northern Part of Taraba State. The objectives of the study were to: describe the socio-economic characteristics of groundnut farmers, estimate the cost and returns associated with groundnut production and identify the constraints faced by groundnut farmers in the study area. Data were collected with the aid of structured questionnaire administered to 150 randomly selected farmers in the study area. Data generated from the questionnaire were analysed using descriptive statistics and budget techniques. Results revealed that most farmers 75% are young, mostly females (57.50%) and educated (75%). It also showed that the total revenue (TR), gross margin (GM) and net farm Income (NFI) per hectare were ₦100,818.00, ₦42,422.00, and ₦41,172 respectively while the Gross margin per naira invested and net farm income per naira invested were ₦0.73 and ₦0.69 respectively. The problems faced by groundnut farmers include: pest and diseases infestations, insufficient contact by extension agents, shortage of labour, low groundnut prices and inadequate credit facilities among others. The study also recommended that government should re-introduce commodity board and advised that farmers should form cooperatives groups in order to facilitate access to modern farm inputs as well as credit facilities from lending institutions to the farmers in study area.

Keywords

Production, Profitability, Budgetary- Techniques, Groundnut, Taraba

1. INTRODUCTION

Groundnuts (*Arachis hypogaea L*) also known as peanuts [1]. It is the 13th most important food crop and 4th in oil seed crop of the world. Groundnut seeds (kernels) contain 40-50% fat, 20-50% protein and 10-20% carbohydrates. The seeds are nutritional source of vitamin E, niacin, folic acid, calcium, phosphorus, magnesium, zinc, iron, riboflavin, thiamine and potassium and are consumed directly as raw, roasted or boiled kernels or oil extracted from the kernels is used as culinary oil. It is also used as animal feed (oil pressing, seeds, green materials and straw) and industrial raw material (oil cakes, and fertilizer). The use of groundnut plant makes it an excellent cash crop for domestic markets as well as for foreign trade in several developing and developed countries [2].

[3] stated that agro-ecological zones of groundnut are the Sahel (12° to 13°N), Sudan (10° to 13°N), Northern half of the Northern Guinea savanna (8° to 11° N) and most part of the southern Guinea savannah (6° to 8°N). Major zones of groundnut are the Sudan and Northern Guinea Savanna where the soil and agro-climatic conditions are favourable. Groundnut which is essentially a tropical plant requires a long and warm growing season. The favourable climate for groundnut is a well distributed rainfall of at least 500mm during the crop growing season, and with abundance of sunshine and relatively warm temperature. Temperature in the range of 25° to 30°C is optimum for plant development [4]. A rainfall of 500 to 1000mm will allow commercial production.

The agricultural sector's contribution to the Gross Domestic Product (GDP) stood at an average of 56 percent in 1960-64 declined to 47 percent in 1965-69 and further declined to 35 percent in 2003-2004[5]. Groundnut production, marketing and trade served as major sources of employment, income and foreign exchange before Nigeria became independent. The groundnut sector provided the basis for the agro-industrial development and contributed significantly to the commercialization, monetization and integration of the natural rural sector.

In spite of the availability of abundant land and human resources in Nigeria, yield per from groundnut production has been on the decline over the years. It has been revealed that, there is a shortfall of over 90 percent of groundnut requirement by companies involved in processing [6]. Therefore, there is a need to reverse the foregoing scenario with a view to improving the productivity and efficiency of resources used among groundnut producers through the investigation of the nature of productivity and efficiency in their production.

Cost refers to the value of the inputs used in production while profits are obtained by subtracting the cost from revenue [7]. So, the more one reduces the more the cost. Production is naturally aimed at either maximizing output, maximizing profit, maximize utility; minimize cost or a combination of some of or all of these [8]. There are costs of variable inputs or factors of production such as labour, fertilizer, tools etc while fixed costs refer to the costs of physical assets, such as tractors, buildings, rent, interest on capital and breeding stock [9]. [10] found out that variable costs are those that a manager controls in the short-run and that will increase as total planned production is increased.

[11] Observed that in the Nigerian agricultural sector, the small operators face pure competition both at production and marketing stages. Because of this structure, output is sold at industry-determined price and profits are maximized at the level of output where marginal cost equals marginal revenue. However, the size of profit depends on how large the per unit output price is compared to the unit cost of production. If the per unit output prices is large, the operators earn pure profit in the short-run. Invariably, if the outcome of the pattern of structure and conduct that is the performance as interpreted by the profit or marketing margins among other things.

[12] In a study of production analysis of groundnut in Ezeagu local Government Area of Enugu State, found out that farmers employed traditional method of farming and use of family labour. He also found out that, groundnut production was a profitable enterprise with a gross margin of ₦8,466.00/ha and a sizeable profit of ₦6,067.00/ha. According to [13], that transport cost, infrastructural facilities like road network, proximity to market location, price of the commodity and activities of the commercial agents affect profitability of groundnut production in Nigeria. He further stated that groundnut is market in the forms of fresh, dry pods, dry grains and other processed forms.

[14] In a study on the profitability of locally processed groundnut oil and cake discovered that it was a profitable venture, though with a low profit margin, [15] suggested raising the price of groundnut by the government to stimulate producers in order to increase their revenue. They also opined that lowering the prices of inputs would reduce cost of production. A similar view was shared by [16] who said that groundnut producers responded to good prices. On this note, the research was therefore designed to provide answers to the following questions.

- (i) What are the socio-economic characteristics of the groundnut farmers in the study area?
- (ii) Is groundnut production a profitable enterprise? and
- (iii) What are the constraints to groundnut production?

2. OBJECTIVES OF THE STUDY

The broad objective of the study was to analyse the profitability of groundnut production in Northern part of Taraba State and the specific objectives were to:

- i. describe the socio-economic characteristics of the groundnut farmers in the study area,
- ii. estimates the cost and returns associated with groundnut production, and
- iii. identify the problems faced by groundnut farmers in the study area.

3. THE STUDY AREA

The study was carried out in the Northern part of Taraba State. The state covers a land mass of 59, 400km² with 16 (sixteen) local government areas. Taraba State lies between latitude 6° 30' and 9° 36' North and longitude 9° 10' and 11°50' East. It is bounded on the North by Bauchi state and Gombe State in the North-East. It is bounded on the East by Adamawa State and by Plateau State in the North-West. It is further bounded by Benue State in the West and shares an international boundary with the Republic of Cameroon to the south and south-west.

Taraba state has a population figure of 2,300,736 people [17]. The study area is heterogeneous in ethnic composition. The state, as an agrarian state, has a great percentage of its populace engaged in farming as an occupation. Taraba state

has a tropical climate, characterized by dry and wet seasons. The rainy season commences early in April to October whereas the dry season starts from November to March. The annual average rainfall in the state ranges between 600mm in the North to over 2000mm in the south [18]. The climate, soil type and hydrology allow for cultivation of most staple foods, grazing land for animals, fresh water for fishing and forestry. The period for harmattan is a period when the dust laden North-East trade winds from the Sahara Desert have a marked effect on the climate of the state. The period is usually cold and dry and the driest months are January and February when the relative humidity is 13 (thirteen) percent.

4. METHOD OF DATA COLLECTION

The data for the research were mainly from primary source. These were obtained through a structured questionnaire, which were distributed to groundnut farmers in the study area. Data collected from farmer covered 2011/2012 cropping season, secondary data/information were also obtained from printed materials such as Journals, textbooks, internet, periodicals, conference proceedings as well as yearly records of production from relevant agencies.

4.1 Sampling technique

The study employed multi-stage, purposive, as well as simple random sampling techniques in the selection of respondents. In the first stage, three local government areas out of the six local government areas of Northern part of Taraba State were purposively selected owing to their prominence in groundnut production. In the second stage, two wards each were chosen from each local government area. In the third stage, from the selected wards, two villages were selected proportional to the size of the wards selected as first sampling frame. In the final stage, a list consisting of all the names of groundnut farmers in each of the 12 villages was obtained, numbered and squeezed, this formed the second sampling frame. Then at random, farmers were chosen from each village. A total of 150 farmers were chosen for the study in a ratio proportional to the size of their population.

4.2 Methods of data analysis

The methods of data analyses used include: descriptive statistics and budgeting techniques. The budgeting technique was employed to estimate costs and returns from groundnut production for 2011/2012 growing season. The net income is the difference between the gross margin and the total fixed cost. Thus we know that GM is the difference between the value of production and that of total variable cost [19]. The net income analysis is thus used to determine the performance of enterprise, that is, the productive component of a firm to obtain information as pertain the business strength or weakness [20]. [21] also stated that net income involves evaluating the efficiency of individual enterprise. The net income analysis was used to achieve objective two (2) of the study. The value of production was the gross income obtained from groundnut and in Naira/kilogram (N/kg) whereas the variable costs considered were costs of inputs like fertilizer, labour, transportation, ploughing e.t.c. Mathematically, Gross Margin is given as:

$$GM = GI - TVC \quad - \quad - \quad (1)$$

Where:

GM = Gross Margin (in Naira)

GI = Gross Income (in Naira)

TVC = Total Variable Cost (in Naira)

Furthermore Net farm Income was calculated which is given as:

$$NFI = GM - TFC \quad - \quad - \quad (2)$$

Where: NFI = Net farm Income (in Naira)

TFC = Total Fixed Cost (in Naira)

5. RESULT AND DISCUSSION

5.1 Socioeconomic Characteristics Of Groundnut Farmers

The Socioeconomic characteristics of groundnut farmers in the study area revealed that majority (75%) of them are relatively young, with mean age of 35 years. Farmers age determines the type of production to be performed, where farmers are younger, they are more likely to be efficient in labour tasking jobs such as weeding, harvesting (picking of the nuts), drying and packaging. The results confirms with the works of [22] who noted that age is one the socioeconomic features that affects the level of productivity. The farmers are mostly (57.50%) female gender which may not be unconnected with the fact that women are more patience and therefore can endure the labourous aspect of the picking and drying of the groundnuts during harvest periods. Most of the farmers are married (75.67%) with only 28.33% are single.

As for the family size, 66.67% of the respondents have 1-5 people in household with mean household size of 5 people. Most of the respondents (58%) had farm size of 1-2 hectares each which is a characteristic of small scale farmers. The respondents' educational level shows that most farmers (75%) have acquired one form of formal education or the other, which is on incentives to effective communication and adoption of new technology. The result agreed with the findings of [23], [24] and [25]. Analysis in table 1 also unveiled that the experience of the farmers in farming groundnuts was 6-10 years with mean of 9 years of experience. The expectation is that the farmers will use this experience to manage their groundnut farms better. Most of the farmers (52%) were not visited by the extension agents while 48% were visited by extension agents. The farmer will be very slow in the adoption of agricultural innovations due to lack of frequent contact by change agents. This result is in consonants with the work of [26] who reported that the economic efficiency level of farmers was significantly affected by extension services.

The result revealed that majority 58% of groundnut farmers used family labour for their production. Thus, the result agreed with the findings of [7] which reported that family labour is the most important component of labour in small holder farmers' production in Nigeria and in most African countries. It is also revealed that majority (83.33%) of the respondents used their personal savings to farm while only 9.17% acquired credit from friends and relatives. The result indicates that that majority of farmers in the study area have little or no access to credit facilities.

Table 1: Socioeconomic characteristics of groundnut farmers

Variable	Freq.	Per. (%)
Age (Years)		
0 – 3	17	14
31-40	90	75
≥41	13	11
Total	120	100(35)
Gender		
Male	51	42.50
Female	69	57.50
Total	120	100
Marital status		
Married	86	71.67
Single	34	28.33
Total	120	100
Family size (in number)		
1-5	80	66.67
6-10	25	20.83
≥11	15	12.50
Total	120	100(5)
Literacy level		
No formal education	30	25
Primary education	35	29
Secondary education	30	25
Tertiary education	25	21
Total	120	100
Farming experience (years)		
1-5	25	20.83
6-10	80	66.67
≥11	15	12.50
Total	120	100
Type of labour		
Family labour	70	58
Hired labour	20	17
Both	30	25
Total	120	100
Source of credit facilities		
Personal savings	100	83.33
Friends and Relatives	11	9.17
Others	9	7.50
Total	12	100
No. of contact with extension agents		
No visit	62	52
Once per week	28	23
Twice per week	22	18
Thrice per week	8	7
Total	120	100

Source: Field survey, 2012

Note: Value in parenthesis is the mean value

5.2 Profitability analysis

The Net Income analysis for groundnut farmers is shown in Table 2. The average variable cost/ha was ₦58,396.00 which represents 97.9% of the total farming cost, while depreciation on fixed cost was ₦1250.00 (2.1%) of the total cost of farming. Thus the total cost (TC) of farming operation/ha was ₦59,646. The total revenue (TR), gross margin (GM) and, net farm income (NFI) per hectare are ₦100,818.00, ₦42,422.00 and ₦41,17.00 respectively. Base on the above figures, it is implied that groundnut farming is profitable in the study area. The result agreed with the finding of [12] who carried out a research on the production analysis of groundnut in Ezeagu

Local Government area of Enugu State and came up with a result that groundnut production is highly profitable. The return on naira invested (R.O.I) by farmers in the study area revealed that for every one naira invested, ₦0.73 and ₦0.69 were gained. This also indicates that groundnut production in the study area is profitable. Therefore this should attract financing by lending institutions. The direct interpretation is that, if the groundnut farmers are financed by commercial lending institutions with say ₦30,000.00 at an interest rate of 18%, based on the return on naira invested above, it means that groundnut farmer will return the principal of ₦30,000.00, interest of ₦5,400.00 and still retain ₦17,500.00 and ₦15,300 as his profits respectively.

Table 2: Average cost and returns of groundnut farmers per hectare

Variable	Values (N/kg)
a) Variable Cost	58,396.00
b) Depreciation on fixed cost	1,250.00
Total cost of Production	59,646.00
c) Returns	
Total Average output	840.15kg
Average price/kg	120.0/kg
Total Revenue	100,818.00
Gross Margin (TR-TVC)	42,422.00
NFI (GM-TFC)	41,172.00
Gross Margin per Naira invested	0.73
Net farm Income per Naira invested	0.69

Source: Field Survey, 2012

5.3 Constraints associated with groundnut production in the study area

The production constraints of the respondents analysed include: pest and diseases infestation, insufficient extension agents, low groundnut prices, inadequate farm machineries, lack of storage facility, inadequate credit facilities, inaccessibility to cheap farm inputs, land tenure and shortage of labour which are all ranked according to their magnitude. The result of table 3 showed that pests and diseases ranked first as one of the major problems faced by groundnut farmers in the study area. This is represented by 83.33%. Insufficient extension agents ranked second with 79.17%, low groundnut prices is third with 75%, inadequate farm machineries fourth with 72.50%, lack of storage facilities fifth with 70.83% while inadequate credit facilities, inaccessibility to farm inputs, land tenure and shortage of labour occupied the Sixth, Seventh, Eight and ninth positions with 69.17%, 66.67%, 43.33% and 23.33% respectively. This finding is in conformity with the works of [27],[28] and [29] as well as that of [30] and [31], who stated that Early and late leaf spots commonly called Tick Diseases caused huge yield loss in groundnut due to defoliation and insect pests on groundnut such as Hobner (*Heliothis amigera*) and aphids have become a serious problem in groundnut in recent years.

The insufficient number of contact by extension agent is prevalent in most community of Nigeria today as one can hardly see a change agent in villages. Even their demonstration plots or SPATs cannot longer be seen these days instead they concentrated themselves in towns and cities where they can enjoy social amenities. This is a serious threat to agricultural growth and development as most farmers cannot apply correctly some agricultural innovations on their farms that require the attention of extension agents. This situation has a devastating effect on the over all economic efficiency level, of farmers as opined by [26]. The research agreed with the findings of [32] who observed that low

producer prices and limited modeling opportunities reduced incentives for small holder groundnut farmers to invest in productivity enhancing technologies.

The inadequate farm machineries may probably be the reason why farmers could not expand their land for groundnut production. Thus this conforms to the works of [12] and [33] who identified access to or lack of improved capital inputs as one of the major problems of groundnut production. Lack of storage facilities may be attributed to the reason why farmers dispose off most of their groundnut product at the farm gate and probably the reason why output is sold at industry determine price as observed by [11]. The inadequate credit facilities may be a reason why farmers could not afford to use modern farm inputs such as high yielding seed varieties and improved farm practices such as irrigation and farm management practices as it is identified by [33]. On the inaccessibility of farm inputs by the farmers may probably be the reason why the groundnut producers suffered from production and downward trend. [34] and [3] attributed groundnut production problem to inadequate farm inputs.

The land tenure system may also be a reason why farm size of the respondents is small. This constraint agreed with the work of [36], who stated that although the country is endowed with agricultural land, the right to ownership of the land and ethnic boundaries make it hard for farmers to easily acquire land for agricultural purpose outside their cultural location. The shortage of labour in the study area may be attributed to peasant farming nature of the groundnut farmers. This finding agreed with the works of [35] and [3] that groundnut production problem 'is associated with high labour cost.

Table 3: Distribution of respondents based on constraints associated with groundnut production

Problems	Freq	Perc. (%)	Rank **
Pests and diseases infestation.	100	14.29	1
Insufficient contact by extension Agents.	95	13.57	2
Low groundnut prices.	90	12.88	3
Inadequate farm machineries	87	12.43	4
Lack of storage facilities.	85	12.14	5
Inadequate credit facilities	83	11.86	6
Inaccessibility to farm inputs	80	11.43	7
Land tenure	52	7.40	8
Shortage of labour	28	4.00	9
Total	700*	100.0	

Source: Field survey, 2012

** Rank in descending order of magnitude

* Multiple responses

6. CONCLUSION

The result of the study shows that Females are more engaged in groundnut farming than men. The farmers in the study area are in their active age and literate. Groundnut farming in the study area is profitable. The problems that were found to be associated with groundnut farming in the study area include: pests and diseases infestation, insufficient contact by extension agents, low groundnut prices, inadequate farm machineries, lack of storage facilities, inadequate credit facilities, inaccessibility to farm inputs, land tenure and shortage of labour.

Having known that, the study area is a profitable venture, investors be encouraged to invest and participate in groundnut

farming. Based on the constraints identified, it will help policy makers to fine-tune ways of ameliorating them for increased production, hence, more profitably the groundnut farmers in the study area and the state at large

7. REFERENCES

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