

AN ANALYSIS OF GROUNDNUT PRODUCTION AMONG COOPERATIVE AND NON-COOPERATIVE FARMERS IN KWAYA KUSAR LOCAL GOVERNMENT AREA OF BORNO STATE, NIGERIA

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ABSTRACT

The study compared groundnut production by cooperative and non-cooperative farmers in kwaya kusar LGA of Borno State, Nigeria. Eighty farmers were selected for the study using multi-stage sampling procedure. Data were collected with the aid of structured questionnaire and were analysed using descriptive and budgetary techniques. The result revealed that 92.50% and 87.50% of the cooperative and non-cooperative farmers respectively were males. About 50% of cooperative and non-cooperative farmers were within the age of 31-40 years, 50% and 60% of cooperative and non-cooperative farmers had farm size of 2.1-3ha respectively. Again, 50% and 62.50% of the cooperative and non-cooperative farmers had secondary school education. Also, 65% and 50% of the cooperative and non-cooperative farmers had farming experience of 11-20 years. The gross margin analysis showed that the total cost of production per hectare was ₦ 38,519 and ₦ 48,850 for cooperative and non-cooperative farmers respectively. The total revenue was ₦ 173,940 for cooperative farmers and ₦ 125,000 for non-cooperative farmers. The result also revealed that the operation ratio of 0.22 and 0.39 for cooperative and non-cooperative farmers with the return per naira invested of 3.51 and 1.56 respectively. The major constraints were low priced produce, cattle interference and poor extension contacts. It was recommended that more farmers should be encouraged to join cooperative to afford them the benefits of group action for the better pricing of produce, access to inputs and reduced production cost.

Keywords: Comparative, Cooperative, Non-Cooperative, Groundnut, farmers

INTRODUCTION

Groundnut (Arachi Hypoge L.) is a cash crop which plays a crucial role in the Nigerian economy. Its production, processing, and marketing provide employment, income and the much needed foreign currency with which the country financed its capital development. Before independence, groundnut was responsible for about 70 percent of the Nigeria's foreign exchange (Girei et al., 2013). The groundnut sub-sector provides opportunity for the agro-industrial development of the country Audu, Girei, Onuk, and Onyenye (2017). The crop is

mainly grown for oil seed, food, and animal feed. It is the world's 13th most important food crop, 4th most important source of edible oil and third most important source of vegetable protein (Muktahar, 2009; Taru, Rameshwa, Rao and Nigam, 2010). The kernels can be eaten raw, roasted or boiled and the groundnut vines are used as fodder for cattle. It can be used for producing industrial materials, such as oil-cakes and fertilizers. Extracted oil from the kernel is used as culinary oil and other extracts are used as animal feeds, the crop can be used in over three hundred ways (Idama, 2000). Almost every part of the crop is used in

some ways. The multiple uses of the groundnut plant make it an important food and cash crop for domestic consumption and export in many developing and developed countries. Groundnut is grown in nearly hundred countries. Globally, it is grown on almost 23.95 million hectares with total production of 36.45 million tons and an average yield of 1,520kg/acre in 2009 (FAOSTAT, 2011). Its production is considered a profitable venture. Global production increased from 35,880,941 tonnes in 2001 to 45,876,654 tonnes in 2016 (FAOSTAT, 2016).

According to FAOSTAT (2016), groundnut production in Africa in 2016 was 13,764,493 tonnes with Nigeria producing 1,876,397 tonnes. Yields in Nigeria are also higher compared with other African countries. Taru, Rameshwa, Rao and Nigam (2010) asserted that globally, 50 percent of total groundnut production is used for oil extraction, 37 percent for confectionery and 12 percent for seed. Groundnut is mainly grown in the northern part of Nigeria; over 85.00 percent of the groundnuts cultivated in the country were accounted for by Northern States. It is either cultivated solely or in mixture with crops like maize, cowpea, millet or cassava. The leading producing States include; Niger, Kano, Jigawa, Borno and Taraba (National Agricultural Extension Research Liaison Services, NAERLS, 2011).

The institutions of cooperative societies provide support and sustainability to rural economic activities. According to Dayo, Ephraim, Omobowale and John (2009), cooperative societies seem to have comparative advantage over non-cooperative

farmers in agricultural production. In view of this, the broad objective of this study is to compare the output and income of the cooperative and non-cooperative groundnut farmers in the study area. The specific objectives were to;

- (i) describe the socio-economic characteristics of groundnut farmers in the study area;
- (ii) estimate the profitability of cooperative and non-cooperative farmers in the study area and
- (iii) Describe the constraints associated with groundnut production in the study area.

METHODOLOGY

Study Area

Kwaya kusar is a Local Government Area (L.G.A) in Borno State, Nigeria. It lies on latitudes $10^{\circ}21' - 10^{\circ}38'N$ and longitudes $12^{\circ}28' - 12^{\circ}38'E$ in the south eastern axis of Borno State. The area is bordered to the North by Hawul L.G.A, to East by Biu L.G.A and Shani L.G.A and to the South-West by Bayo L.G.A. It has a total land area of 732 square kilometres and population of about 56,500 with a growth rate 2.8% (NPC, 2006). The projected population is 189,789 for 2020. The L.G.A has two distinct seasons; rainy and dry season. Rainfall lasts for at least six months - it begin in May and ends in October. The average annual rainfall is 1500mm with temperature ranging from $25^{\circ}C - 43^{\circ}C$. The major occupation of the people is farming. The major crops cultivated by the people include maize, cowpea, groundnut, millet and guinea corn and vegetables such as tomato, okro, spinach and pepper. The animals reared

by the people include sheep, goat, cattle and poultry (BOSG, 2012).

Sampling Procedure

A multi-stage sampling procedure was employed to select 80 respondents for the study. Guwal and Wada Wards were purposively selected out of the ten wards in the first stage due to high intensity of groundnut production activities. Furthermore, kwabu, Hema, Gadam and Salahu villages were selected from the two wards because of the presence of cooperative activities in the villages. The last stage involved random selection of ten (10) members of cooperative and non-cooperative farmers from each of the four villages. That is, selection of 20 respondents per village. Thus, a total of forty (40) cooperative and (40) non-cooperative members were sampled.

Data Collection

In the study, primary data were collected through the use of structured questionnaire, this was designed to elicit information on the socio-economic characteristics of the respondents such as; age, household size, level of education, e.t.c and revenue derived from groundnut during the 2018/2019 cropping season.

Analytical Technique

Descriptive statistics (frequency distribution, mean and percentage) and gross margin analysis were used for analysis. The gross margin analysis involves evaluating the profitability of an individual enterprise. It is a very useful planning tool in a situation where fixed capital is a negligible portion of the farming enterprise. Gross margin by definition

is the difference between the total revenue and the total variable cost (TVC).

$$GM = GI - TVC$$

Where:

GM = Gross margin (N)/ha

GI = Gross income (N)/ha

TVC = Total variable cost (N)/ha

Gross income also called total value of production, it is a total physical production multiplied by the unit price of the product.

Operation Ratio

Operating ratio measures the solvency of the farm. A ratio less than one is desirable because it indicates that the farm is making profit. A ratio of one implies break even and ratio greater than one implies a loss (Olukosi and Erhabor, 2008). According to Musa, Dongs, Ghamba, and Jibril, (2006)., the lower the ratio (<1) the higher the profitability of the farm business.

It is mathematically express as:

$$OR = TVC/TR$$

Where:

OR = Operating ratio/ha

TVC = Total variable cost/ha

TR = Total revenue/ha

Also, the return for every naira invested was measured to determine the profitability of the groundnut business, i.e.

$$\text{Return per Naira Invested} = GI/TVC$$

Where:

GI = Gross farm income/ha

TVC = Total variable cost/ha

Table 1: Socio Economic Characteristics of Groundnut Cooperative and Non-cooperative Farmers

Variable	Cooperative		Non cooperative	
	Frequency	Percentage	Frequency	Percentage
Gender				
Male	37	92.50	35	87.50
Female	3	7.50	5	12.50
Age (years)				
>20-30	7	17.50	6	15.00
31-40	20	50.00	20	50.00
41-50	10	25.00	6	15.00
51 and above	3	7.50	8	20.00
Farm size				
1.1- 2	5	12.50	10	25.00
2.1-3	20	50.00	24	60.00
3.1-4	9	22.50	6	15.00
4.1-5	6	15.00	-	-
Educational Status				
Primary	9	22.50	8	20.00
Secondary	20	50.00	25	62.50
Tertiary	8	20.00	5	12.50
Non formal	3	7.50	2	5.00
Farming experience				
1-10	3	7.50	5	12.50
11-20	26	65.00	20	50.00
21-30	4	10.00	10	25.00
31-40	7	17.50	5	12.50
Total	40	100	40	100

Source: Field Survey, 2018.

The result in Table 1 revealed that about 92.50% of the groundnut cooperative farmers were males while 7.50% were females. Majority (87.50%) of the non-cooperative farmers were male while 12.50% were female. This may be due to the fact that that norms and value of the state does not allow male and

female from distance relation to mix up. This result agreed with the finding of Makama (2006), who reported that 92% of the groundnut farmers in Kiyawa LGA of Jigawa State were male.

Looking at the age of the respondents in Table 1, 75% of the cooperative farmers were within the age of 31-50 years, while 65% of the non-cooperative farmers were within the age group of 31-50 years. This implies that both the cooperative and non-cooperative farmers were within the active and economic age and could participate in adoption of improve agricultural practices, and this could influence the level of groundnut production hence increase the profit level. This result tallies with the finding of Usman (2016), where groundnut farmers (80%) in Bauchi State were within the active age of 26-50 years.

Result in Table 1 also depicts that most of the respondents 50.00%, 60.00% of cooperative and non-cooperative farmers had a farm size of between 2.1- 3 ha respectively. This implies that groundnut farmers in the study area were small-scale farmers. This result tallies with the finding of Yakubu (2012), who reported that average farm size of groundnut farmers in Yobe State was 2.6 ha.

Table 1 also shows that 50% of the cooperative farmers, 62.50% of the non-cooperative farmers had secondary school.

The level of education of the respondents is sufficient for farmers to comprehend some scientific innovations and technologies. Moreover, respondents with good education have access to information, more receptive to improve farming techniques. This result agrees with the finding of Ejechi (2016), who reported that about 70% of small-scale groundnut farmers in Nasarawa State had secondary school education.

Farming experience consists of knowledge or skills of farming which is gained through involvement in or exposure in farming activities. Large experience improve performance, utilization of scarce resources, economic decision making also timely assessment of alternative Makama (2006). Table 1 shows that majority 65% of the cooperative farmers, 50.00% non-cooperative farmers had farming experience of 11-20 years. This has great influence on production efficiency as experience goes with number of farming years Yakubu (2012). This result tallies with the finding of Aasa (2006), who reported that majority (70%) of groundnut farmers had farming experience of 10-30 years.

Table 2: Cost and Return of Cooperative and non-Cooperative Groundnut Farmers

Cost and return	Cooperative		Non-cooperative	
	Value (₦/ha)	% TVC	Value (₦/ha)	% TVC
Seed	4300	11.16	5600	11.46
Fertilizer	6200	16.09	7000	14.32
Herbicide	3800	9.15	4200	8.59
Transportation	2700	7.01	3000	6.14
Land clearing	5079	13.18	6960	14.25
Ridging	3189	8.28	4310	8.82
Planting	2168	5.63	3070	6.28
Weeding	2733	7.10	3098	6.34
Spraying	2340	6.07	2500	5.11
Harvesting and processing	6010	15.60	9120	18.67
Total cost of labour	24219	55.86	32058	59.47
Total variable cost	38519		48850	
Revenue component				
Average output kg/ha	1672.5		1250	
Average price ₦/kg	104.00		100.00	
Total revenue	173,940		125,000	
Gross margin	135,421		76,150	
Operation ratio	0.22		0.39	
Return per naira invested	3.51		1.56	

Source: Field Survey, 2018.

The result in Table 2 indicated that the total labour cost for cooperative farmers accounted for about 55.86% while for non-cooperative farmers accounted for 59.47%. Cost of seed accounted for 11.16% for cooperative while for non-cooperative farmers, it accounted for 11.46%. Cost of fertilizer accounted for 16.09% while for non-cooperative accounted for 14.32, cost of herbicide for cooperative farmers accounted for 9.15% while for non-cooperative farmers 8.59%. Transportation cost account for 7.01% while for non-cooperative farmers accounted for 6.14%. On the average, it cost ₦ 38,519/ha to cultivate groundnut in the study area for cooperative

farmers while it is ₦ 48,850/ha for non-cooperative farmers. An average of ₦ 173,940/ha accrues to cooperative farmers as revenue and ₦ 135,421 was left as gross margin while ₦ 125,000 accrues as a revenue, ₦ 76,150 is left as gross margin for non-cooperative farmers in the study area. The gross margin analysis indicates that groundnut production is profitable for both cooperative and non-cooperative farmers in the study area. This agree with the finding of Ogaji (2010), who reported that groundnut production is profitable in kaduna State with a gross margin of ₦ 79,000.

The result indicated that the operation ratio for cooperative farmers was 0.22 while 0.39. For non-cooperative farmers. As this reveals that groundnut production in the study area was profitable for both cooperative and non-cooperative farmers. This result agreed with the finding of Musa et al., (2012), which showed that the lower the operation ratio, the higher the profitability of the enterprise. Therefore, it can be said that groundnut production is profitable for both cooperative

and non-cooperative farmers in the study area. The return per naira invested was 3.51 for cooperative farmers implying that for every naira invested, there is a return of ₦ 3.51 while for non-cooperative farmers the return per naira invested was 1.56 implying that for every naira invested there was return of N 1.56. This finding is slightly higher than the finding of Usman (2016) in Jigawa State, where he found a return per naira invested of ₦ 1.45.

Table 3. Constraints Associated with Groundnut Production in the Study Area

Constraints	Cooperative			Non-Cooperative		
	Freq	Percentage	Rank	Freq	Percentage	Rank
Inadequate capital	3	3.75	7 th	25	10.68	8 th
High cost of labour	12	14.28	3 rd	30	12.82	3 rd
High cost of input	10	11.9	4 th	31	13.24	4 th
Lack of quality seed	8	9.52	5 th	28	11.96	5 th
Low price of produce	22	26.19	1 st	32	13.67	2 nd
Destruction by cattle	20	23.80	2 nd	26	11.11	7 th
Incidence of pest and diseases	7	8.30	6 th	27	11.53	6 th
Contact with extension agents	2	2.39	8 th	35	14.95	1 st
Total	84	100	-	234	100	-

Source: field Survey 2018

The constraints to groundnut production in the study area as shown in Table revealed that inadequate capital ranked first among the non-cooperative farmers while low price of groundnut was ranked first by their cooperative counterparts. This is a disincentive to farmers who may want to dispose of their produce immediately after harvest. Furthermore, destruction of farm by cattle and high cost of farm input ranked high among the cooperative farmers. Conversely, poor extension visits, low price of produce and high cost of inputs e.g labour ranked highest among the non-cooperative farmers. The poor extension services and high input

cost may be due to poor group action among the farmers.

Conclusion and Recommendations

The study revealed that groundnut farming is profitable for both cooperative and non-cooperative farmers. However, it is recommended that farmers should be encouraged to join credible cooperative societies as they take up groundnut production. Provision of farming assistance in form of extension services, enhanced access to credit, improved varieties, farm mechanisation implements will go a long way to improving

the income and the living standard of the farmers.

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