

Profitability of Cowpea Production in Osun State: Case Studies of Iwo, Ayedire and Ola Oluwa Local Governments

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Abstract

This study estimated the profitability of cowpea production in Iwo, Ayedire, and Ola-oluwa local government arewas of Osun state. The data used were collected from the administration of questionnaire to 150 farmers randomly selected and was analysed using descriptive and cost and return analysis. The result shows that the farmers are majorly muslims (56%) and majority (76%) were males. The mean age of the farmers was 36years with majority of them (81%) having formal education. It was further observed that majority (77%) were married with most of them (70%) having household size of 6-10persons. The average farming experience of the farmers is 15years where most of them (46%) had less than one (1) ha of farm. Majority of the farmers (64%) acquired their lands by inheritance. Furthermore, it was observed from the gross margin analysis that cowpea farmers obtained an average profit of #32,545.115 per season. The net profit margin was calculated to be 46.5%; it shows that for every one naira (#1) increase in output, there is 46.5% increase in the farmers net farm profit. This implies that cowpea production is profitable in the study area. Based on this findings, government should help provide land for large scale production to improve the livelihoods of the farmers.

Keywords

Profitability Analysis, Cowpea, Budget, Gross Margin, Net Profit

1. Introduction

Cowpea *Vigna unguiculata* L. Walp is an important food grain legume in the tropics. The diet of most people in developing countries is based on processed grains, roots and fruits. Cowpea, because of its high protein content constitutes the natural protein and represents the legumes of choice for many households in Africa. Nigeria is the largest producer of cowpea in Africa; Agboola (1979) reported that an average of 271.5kg/ha from the vast area of 3.8million hectares cultivated to cowpea in Nigeria. In Nigeria cowpea is grown in many

parts of the country, but it is mainly cultivated in the savannah region due to the weather condition that favours the growth and production of cowpea. Cowpea is an important staple food and a cheap protein source to rural and urban dwellers with the demand for the commodity increasing in the nation (Stephen et al., 2004). Indeed cowpea is gradually attaining economic importance in Nigeria (Petu-Ibukunle. et al., 2008). Cowpea is a leguminous plant whose value lies in its high protein content and ability to tolerate drought. Cowpea is found on farmer's field across the entire savanna agro-ecological zone (Yusuf et al., 2008) however it could be grown as a forage crop or as a dual purpose crop that provides high protein grain for human

consumption as well as crop residue of high nutritive value for livestock. Cowpea also plays a vital role as a source of livelihood for millions of people in west and central Africa. It contains about 25% protein and 64% carbohydrate (Akibode, 2011). Cowpea also contributes to the sustainability of cropping systems and soil fertility improvement in marginal lands by providing ground cover and plant residues, improvement in soil water holding capacity, fixing nitrogen and suppressing weeds. Economically, cowpea has a great value in the internal trade in the country as it promotes trade between the production areas and non-production areas. It also serves as a source of income for middlemen.

Cowpea is one of the most important crops in the international market. United State Department of Agriculture (USDA) (2003) noted that cowpea is largely grown with direct labour in an intensive crop in most parts of the tropical world which has enhance low productivity due to high level of illiteracy, high cost of inputs, physical and biotic constraints coupled with the use of primitive crude tools, such as hoe, cutlass, axes etc. these acts affect the agricultural transformation of cowpea. Production of cowpeas in Nigeria especially in Iwo, Ayedire and Olaoluwa local government of Osun state is expected to be of high value; this flows from the fact that cowpeas are low cost crops to produce because they require minimum inputs. Cowpeas tend to have higher output to input ratios as compared to crops such as maize (Auko *et al.*, 2006) which implies that cowpeas have a high market value in terms of profitability.

However little is known about the profitability of cowpea production in Nigeria as a country, because despite their great potential cowpeas have received little attention in terms of agricultural policy thrust and economic research (Auko, 2006). Most research on the crop has focused on characteristics such as yield enhancement through breeding, soil management and other agronomic properties (Tenywa, 1999). However other factors concerning pulses and in particular cowpeas are important such as production efficiency, market dynamics, consumer preference and indeed profitability because these factors have an influence on production. If the profitability of cowpeas is not known, it will not only affects the farmers who produce cowpeas but also affects all the stakeholders who may be interested in participating in the value chain of the crop. One of the factors that could be contributing to the dearth in knowledge on the profitability of cowpeas production could be poor data collection and record keeping, some other factors that influence profitability of cowpea production in the study area may include; farmer's characteristics, input use, labor use, costs, whether the farmers produced for sale or for home consumption as well as the methods of production.

This research is therefore undertaken to determine the profitability of cowpea production in Iwo, Ayedire and Olaoluwa local governments of Osun state. The specific objectives were to; examine the socioeconomic characteristic that affects cowpea production in the area, to determine the factors affecting cowpea profitability, to examine the profitability of cowpea production.

2. Methodology

2.1. Study Area

The study area is Osun state, Nigeria which was carved out of Oyo state on the 27th August, 1991. It is known as the state of the living spring occupies a land mass of approximately 8,602 square kilometers The people of the state are Yoruba's and traced their origin to Oduduwa and the town of Ile-Ife. Osogbo is the capital of the state with a population of 2,203,016.. The state is bounded on the west by Oyo state, Ondo and Ekiti states in the east, Kwara state in the north and Ogun state in the south. Osun state has thirty local governments among which are; Iwo, Ayedire and Olaoluwa where my study covered. The people in these local governments especially Iwo local governments are primarily of Yoruba descent, and are predominantly Muslims. The town's primarily economic activity is agriculture with primary crops which are arable or food crops like; cocoa, yam, cowpea, corn, cassava and palm oil; however trading also is an important economic activity in the area.

2.2. Data Collection

Primary data was employed for this study and information was obtained from cowpea farmers in Iwo, Olaoluwa and Ayedire local governments of Osun state. The target population of the study make up majority of active cowpea farmers in the state. The questionnaires were administered to 150 farmers for sampling out of the whole population of farmers out of which 131 were collected. Questionnaire given to the farmers contain information like the socioeconomic characteristics such as age, gender, level of education, marital status, farm size, family size, source of income, source of land, source and size of labour. Also the questionnaire contains information about the cost of input used, seeds varieties and other information about the production of cowpea.

2.3. Data Analysis

This study made used of some statistical tools in analyzing the data collected from the farmers, which includes;

- i. Descriptive statistics,
- ii. Budgetary techniques; Total fixed costs (includes; cost of hoes, cutlass, knapsack sprayers, cost of ploughing e.t.c.

Total variable costs (includes costs of seeds, labours cost, transportation, costs of chemical used.)

$$GM = TC - TVC$$

$$\wedge = TR - TC$$

$$e = \wedge / TC$$

3. Results and Discussion

3.1. Socioeconomic Characteristics of the Farmers

The information on socioeconomic characteristics of sampled cowpea farmers in the study area are presented in this

section. As presented in the table below, majority of the farmers (76%) were males and married (77%). The average household size of the surveyed farmers was 7 persons, which implies that family labour is the appreciable source of labour. The household size determines the available labour force to be employed in carrying out production activities. In this case most of the farmers uses their family members as their source of labour to reduce the cost of labour; this is because cowpea farming is labour intensive. According to the report of Bayacag (2001), there is a positive and significant relationship between household size and farmers' efficiency in production. Since the production of the crop is not mechanized, farmers depend solely on human labour which is an important variable in agricultural production. The ages of most of the farmers ranges between 31-50years (73%) with the mean age calculated as 30years. This shows that majority of the farmers were in their active age and head of households with family responsibilities. It could be deduced that the farming households depend on the returns from the cowpea to sustain their livelihoods. The educational status of the farmers indicated that majority (81%) were educated with 41% having secondary education and 29% tertiary education. This implies that most of the farmers could learn and apply new technology that can improve their yield. The farming experience of the

farmers shows that majority (35%) had 11-20years experience of cowpea production. This implies that majority are young farmers and it is observed that the more experience the farmer is the more he has knowledge about farming and therefore increases productivity due to different strategies he must have acquired. This study also revealed that most of the farmers (58%) acquired their funds for cowpea production from selling of agricultural products while just few (3%) got it from banks. This therefore shows that most of the farmers do not have access to other sources of funds which leads to inadequate funds for cowpea in these study areas in Osun state. Furthermore, it was observed that majority of the farmers (46%) had less than one hectare of farmland, thus, inadequate farm land due to cost of purchases and using of farmable lands for non-agriculture activities affect the production of cowpea production. This is in accordance with Jimoh et al (2016) who also observed that majority of cucumber farmers in Iwo were small scale farmers. The major form of land acquisition in the area was observed to be inheritance which has also accounted for inadequate farmland (1 ha) for cowpea farming. This is due to the fact that inherited farmland is always small for farming. It leads to low cowpea production, hence, low profit to the farmers.

Table 1. Socioeconomic characteristics of cowpea farmers in Iwo, Ayedire and Ola-oluwa local government areas of Osun State, Nigeria.

Demographic variables	Freq (n=131)	Percent	Demographic variables	Freq (n=131)	Percent
Sex			Marital status		
Male	99	76	Single	14	11
Female	32	24	Married	101	77
Age			Divorced	08	06
21-30	12	09	Widow	08	06
31-40	54	41	Farming experience (years)		
41-50	42	32	1-10	36	27
Above 50	23	18	11-20	46	35
Educational status			21-30	27	21
No formal education	25	18	Above 30	22	17
Primary education	15	12	Farm size (ha)		
Secondary education	53	41	Less than 1ha	60	46
Tertiary	38	29	1-1.9ha	58	44
Household size			More than 2ha	13	10
1-5	28	21			
6-10	92	70			
Above 10	11	09			

Field Survey, 2014

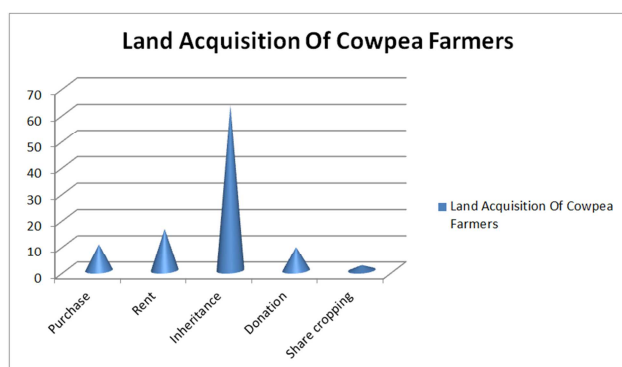


Fig. 1. Land acquisition of Cowpea Farmers.

3.2. Budgetary Analysis

Budgetary analysis was used to estimate the cost of production of the farmers, returns and also to calculate the profitability ratio of the cowpea farmers in the study areas. From the analysis of the field survey, the average profit of a farmer was calculated to ₦ 32,545.115 per season. This implies that an average farmer in the study areas made profit from cowpea production, which implies that cowpea production is a profitable agronomy enterprise. Profitability ratio was also calculated using two different profitability ratios: Net profit margin and Contribution Margin which gives 46.5% and 74.65% respectively. It shows that for every

₦1 increase in output of cowpea there is 46.5% increase in the farmers' net profit in the study areas. While contribution margin analysis shows that for every ₦ 1 sales of cowpea outputs, 74.65% was left to contribute toward direct costs and profit of cowpea production in the study areas. The rate of returns was also calculated to be 0.87, which implies that, for every naira invested in cowpea production there is a return of 87kobo. This shows that the profit of cowpea is high in these areas; therefore farmers should be encouraged to go into cowpea production this conforms with Jimoh K.A et al (2016) who also observed that cucumber production is profitable in the study area.

$$\begin{aligned}\text{Net Revenue} &= \text{Total Revenue} - \text{Total Cost} \\ &= 916,085.5 - 489,744.5 \\ &= 426,341.0\end{aligned}$$

$$\begin{aligned}\text{Rate of Return} &= \text{Profit} / \text{Total cost} \\ &= 426,341.0 / 489,744.5 \\ &= 0.87\end{aligned}$$

$$\begin{aligned}\text{Average Profit} &= \text{Average Total Revenue} - \text{Average Total Cost} \\ &= \text{₦ } 69,930.2 - \text{₦ } 37,385.05 \\ &= \text{₦ } 32,545.115.\end{aligned}$$

Profitability ratios;

$$\begin{aligned}1. \text{ Net profit margin} &= \text{net profit} / \text{revenue} \\ &= \text{₦ } 426,341.0 / \text{₦ } 916,085.5 \\ &= 0.465\end{aligned}$$

$$\begin{aligned}\text{Net profit margin percentage} &= 0.465 \times 100 \\ &= 46.5\%\end{aligned}$$

2. Contribution margin = contribution/sales

$$\begin{aligned}\text{Contribution} &= \text{sales} - \text{variables} \\ &= \text{₦ } 916,085.5 - \text{₦ } 232,213.5 \\ &= \text{₦ } 683,872.0\end{aligned}$$

$$\begin{aligned}\text{CM} &= \text{₦ } 683,872.0 / \text{₦ } 916,085.5 \\ &= 0.7465\end{aligned}$$

$$\begin{aligned}\% \text{ of CM} &= 0.7465 \times 100 \\ &= 74.65\%\end{aligned}$$

Table 2. Budgetary Analysis Of Cowpea Production In The Study Areas.

S/NO	ITEMS	AMOUNTS (₦=)
1	Total revenue (TR)	916,085.5
2	Total variable cost (TVC)	232,213.5
3	Total fixed cost (TFC)	257,531.0
4	Total cost (TC)	489,744.5
5	Net revenue (TR-TC)	426,341.0
6	Gross profit (π)	899,261.2
7	Rate of returns (π / TC)	0.87

Source: Field survey, 2014

4. Conclusions

4.1. Major Findings

The results of the study pointed out that majority of the cowpea farmers fall within the age range of 31-50 which is a very active age range and these farmers are majorly males which have more than ten years of farming experiences, in which most the farmers are educated and married. The farm budget analysis carried out showed that cowpea production was profitable in the three local governments of studied. The

average profit of the farmers was calculated as ₦32,545.11. while the net revenue was ₦42,634.10. This implies that cowpea production is a profitable agronomy enterprise.

4.2. Recommendations

Based on the results from the analysis of the study, the following recommendations have been found useful with the motive of improving cowpea production in the study areas.

- 1) Government should make available large farmland for commercialized cowpea production to actively engage the teeming youths and improve the livelihoods of the farmers.
- 2) Government should help in providing funds to the farmers to enable them operate in large scale.
- 3) The masses should be enlightened on the profitability of cowpea production to help engage the unemployed youth and alleviating poverty.

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