ECONOMIC ANALYSIS OF CASSAVA PRODUCTION IN LAGELU LOCAL GOVERNMENT AREA OF OYO STATE, NIGERIA.

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ABSTRACT

The study assessed economic of cassava production in Lagelu Local Government Area of Oyo State. To this end, effort was made to examine the socio-economic characteristics of the cassava farmers, determine the resource-use efficiency as well as the profitability of cassava production in the area. To achieve the Objective of this study, 90 cassava farmers were randomly selected from 9 villages. Data were subsequently analyzed using descriptive statistics, Net Farm Income (NFI) and multiple regression models. The results showed that most farmers used family labour (62%) crude implements (89%) and personal savings (72%) for their farming operation. Farm size, fertilizer, capital and stem cuttings were the significant factors influencing output level. Estimated efficiency ratio (r) shows that resources were not efficiently utilized and the net farm income per hectare of land was N 30,703 which revealed that cassava production is profitable in the area.

Keywords: Cassava production, resource use efficiency, profitability.

INTRODUCTION

Nigeria is traditionally an agricultural country, providing the bulk of its own food needs and exporting a variety of agricultural goods. By the 1970s however, oil has substituted cash crops as the major source of foreign exchange (Nweke, 1997). The Nigerian agriculture contributes more than 30% of total annual Gross Domestic Product (GDP), employs about 68% of labour force, accounts for over 70'% of the non-oil exports and provides over 80% of the food needs of the country (RMU, 2003). Therefore, Nigerian agriculture is one of the most important sectors of notable relevance in economic development and growth. This is because food retains its position as the basis for human existence (Adegboye, 2004). Nigeria as a nation has agricultural potentials which contribute substantially to her economic growth, despite the importance of agriculture in terms of employment creation, its potential for contribution to economic growth is far from being fully exploited. The sector's low contribution to the nation's economy can be traced to neglect from the government as a result of oil discovery in the 1970s.

Inappropriate macroeconomic and sector policies perpetuated by the fifteen years of military rule and mismanagement have also had a negative impact not only on agriculture, but also on the entire economy. Consequently, per capita income have declined from approximately US $ 1, 200 in the 1980s to about $300 in 1999 (World Bank, 2000). The petroleum industry which is said to be the cash industry has little impact in the country in terms of employment creation compare to the agricultural sector which has a tremendous impact (Onochie, 2005).

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Cassava (Manihot esculenta) is one of the most important root crops in the world. It belongs to the family Euphorbiacae and has its origin in Eastern Brazil where it is a major staple food of the people (RMU, 2003). Cassava is an essential part of the diet of more than half a billion people in the world (FAO, 2000). It is one crop which grows in poor soil, on marginal lands where other crops cannot. It has an added advantage of being a crop that can grow in different soil types and climatic conditions and it requires minimal fertilizer, pesticides and water (FAO, 2000).

Nigeria is the largest producer of cassava in the world in terms of hectare (FAO, 2002). Total area cultivated of the crop in Nigeria in 2005 was 3.5 million hectares with an output of 42 million metric tonnes and average yield of about 12 tonnes per hectare (Yusuf, 2006). The enormous role of cassava in rural development led to Federal Government in 2002 to come up with initiative, aimed at generating $5 billion annually from cassava export from 2007. However, it is expected that, the effort would serve as an engine of economic growth in Nigeria; increase annual production to attain global cassava competitiveness and to integrate the rural poor farmers into the mainstrea76m of national economy (Nigeria First Org.,2005).

Diversification and expansion of cassava development into new growth market like ethanol, starch, livestock feed and household flour as substitute for various imported items provide real opportunities for income generation for the rural populace. The crop is extensively cultivated in the tropical and sub-tropical regions for its edible starch root, a major source of carbohydrates. Indeed; cassava is the third largest source of carbohydrate for man in the world, with Africa being its largest centre of production (Agboola, 1998).

Efforts aimed at increasing cassava output cannot be achieved unless the current level of inputs utilization and margins received by small holder farmers under traditional system of farming is known. Despite all human and material resources devoted to agriculture, the productive efficiency for most crops which cassava is not an exception still fall under 60 percent (Fakayode *et al.,*2008). Farmers output therefore need to be increased using existing levels of conventional inputs and technology. Thus gaps exist in the knowledge of resource use efficiency and profitability in cassava production in Lagelu Local Government Area, Oyo State. This forms the main focus of this study. The specific objectives of the study are to describe the socio-economic characteristics of the cassava farmers, evaluate resource-use efficiency and profitability of cassava production in the area.

Hypothesis

Ho: Cassava production is not profitable in the study area.

METHODOLOGY

The study was conducted in Lagelu local government area of Oyo state. The Local Government Area (LGA), lies between latitude 7°. N and 9°.N and longitudes 2°.E and 5°.E of the prime meridian. It covers an area of approximately 7, 300 km^2 and has a total population of about 84 280 (FRN, 2007).

The major ethnic group of the LGA is Yoruba with farming as their major occupation. The mean annual rain fall is between 880-2600 mm (CBN, 2000).

The data used for this study were obtained from primary source. The primary data were obtained through the use of structured questionnaire, administered on 90 respondents.

Simple random sampling technique was employed for this study. This involved getting the list of all the villages engaged in cassava production in the LGA. To this end, 9 villages were randomly selected and 10 farmers were also randomly sampled from each of the selected villages.

Descriptive and inferential statistics were used to analyze the data. The descriptive statistics involves the use of frequency distribution, percentages and mean, while the inferential statistics includes multiple regression (Cobb- Douglas) and net farm income (NFI).

The models are specified as:-

$$Y = F (X_1, X_2, X_4, X_5, U)$$

Where Y = Cassava output (tonnes)

X_1 = farm size (ha)

X_2 = Labour (man days)

X_3 = Quantity of fertilizer (kg)

X_4 = capital investment (N)

X_5 = stem cuttings   (N)

U = error term

2.   NFI = TR – (TVC + FC)

Where NFI = Net Farm Income

TR = Total Revenue

FC = Fixed Cost.

TVC=Total Variable Cost

RESULTS AND DISCUSSION

Table 1 reveals that there were no farmers younger than 20 years or older than 50 years in the study area. Most of the farmers were between the ages of 31 and 41 years, which constitute 58.9 percent of the farmers. This indicates that able-bodied   adults who were still active were involved in cassava production. Many of the youths between 20 -30 years had probably migrated to the urban areas in search of white collar jobs. This is in line with the finding of Balarabe (1997), who reported that most rural youth migrate to urban area in search of white collar jobs, which greatly affect agricultural productivity.

Similarly, the educational attainment of the farmers show that 47.8 percent of the farmers had no formal education while just about 10 percent had secondary education. This implies that a

considerable proportion of the farmers were not-literate. According to Malami (2002) non – literacy will have a negative implication on record keeping and adoption of improved technologies. This could be the reason why most of the respondents still employ traditional means of production.

The distribution of the respondents according to gender in Table 1 shows that, majority of the farmers 83.3 percent were male while 16.7 percent were female. This is in contrast to the finding of Yusuf (2006) who reported men to be more in cassava production than women.

The distribution according to farm size in Table 1 shows that majority 86. 6 Percent of the farmers cultivate less than 2 hectares. This implies that cassava production in the area was mainly for household consumption. Only few of the respondents grow cassava for commercial purpose. This substantiate the finding of Oyelakin (1992) that most rural farmers produce mainly for household consumption due to inadequacies of land and other necessary inputs required for commercial production

Table 1: Distribution of Cassava Farmers According to   their Socio–economic Characteristics

Characteristics	Frequency	Percentage(%)
Age (yrs)		
20 – 30	15	16.7
31 – 40	38	42.2
41 – 50	37	41.1
Total	90	100
Type of education		
No formal education	43	47.8
Primary	38	42.2
Secondary	9	10
Total	90	100
Gender		
Male	75	83.3
Female	15	16.7
Total	90	100

Farm size (ha)

0-0.99	40	44.4
1-1.99	38	42.2
2 and above	12	13.4
Total	90	100
Household size		
1-5	18	20
6-10	38	42.2
11-15	24	26.7
16-20	10	11.1
Total	90	100

Source: - field survey, 2008

The distribution according to household size (Table 1) shows that 20.0 percent of the farmers had family size ranging from 1-5 persons(s) , 42.2 percent had family size of 6 – 10 person(s) , 26.7 percent had family size of 11-15 persons while 11.1 percent had family size of 16-20 persons. The reason for the large family size could be probably due to the fact that many small scale famers utilize family labour for farming activities.

Table 2:Estimates of Cobb-Douglas Production Function for Cassava Production

Independent Variables	Coefficients	T-ratio
Land (x_1)	0.883	34.18***
Labor (x_2)	0.005	1.22 ns
Fertilizer (x_3)	0.255	5.122 ***
Capital (x_4)	0.663	6.018***
Stem cuttings (x_5)	0.272	2.892***
Constant	-7.408	-7. 999***
R^2	0.797	
F-ratio	8.37***	

Source: field survey, 2008

*** = significant at 1% level

** = significant at 5% level

n.s = not significant

The production function that was used to determine the nature of inputs –outputs relationship in cassava production is shown in Table 2 (Cobb-Douglas production function). It has R^2 value of 0.797. This implies that about 79.7% of the variation in total value of output (Y) is explained by inputs indicated in the regression model (Table 2). The regression coefficients of land (X_1), fertilizer (X_3), capital (X_4) and stem cuttings (X_5) were significant at 1% level of probality. This implies that, these inputs positively influence cassava production in the study area.

Table 3: Estimated efficiency ratio (r)

Variables	MPP	MVP	MFC	Efficiency ratio
Land (x_1)	9.83	491.4	8000	0.06
Fertilizer (x_3)	0,064	3.2	52	0.06
Capital (x_4)	4.26	213	24,153	0.08
Stem cuttings (x_5)	16.9	847.3	2491	0.34

Source field surrey; 2008

Efficiency ratio was computed for each input, by comparing the marginal value product (MVP) to its marginal factor cost (MFC) as shown in Table 3.

The result revealed land, fertilizer, capital and stem cuttings were over-utilized. Efficiency and productivity could be improved if the farmers use less of the inputs.

Table 4: Cost and Returns of Cassava Production

Cost	Cost N/ha
Fixed cost (FC)	
Lease of farm land	4,000
Depreciation of farm assets	1,290
Sub-total	5,290
Variable Cost (VC)	
Labour	14,400
Transportation	4,500
Fertilizer	20,800
Stem cutting	5,600
Sub-total	45,300
Total cost of production	50,590
Total revenue	81,293
Net farm income	30,703

Source: field survey, 2008.

NFI =TR-(TVC+FC)=N 81,293-N50,590

NFI=N30,703

Table 4 shows that the fixed cost per hectare was N 5,290 and variable cost per hectare was N 45,300 while the total cost of production per hectare was N 50,590. The study shows higher proportion of the variable costs   incurred on fertilizer and labour while higher proportion of the fixed cost was expended on land. The total revenue realized through the sale of cassava output per hectare was N81, 293. Meanwhile, the Net Farm Income per hectare was N30, 703. This shows that cassava production is profitable in the study area. This calls for the rejection of null hypothesis which states that cassava production is not profitable in the study area. This result agrees with the finding of Yusuf (2006) which identified cassava production to be profitable and could serve as a good source of income for farmers and the nation at large.

CONCLUSION

This study revealed that the farmers in the study area were generally small– scale operators. In this regard, land, fertilizer, capital and stem cuttings were the main factors influencing output of cassava in the study area.

However, the primary objective of any enterprise is profit maximization and this study has revealed that cassava production in the study area is economically profitable, and the study also revealed that the resources (land(x_1), fertilizer(x_3), capital(x_4) and stem cuttings (x_5) were over utilized hence there was need for resource adjustment in order to ensure   efficient use of the resources.

RECOMMENDATIONS

Extension services should be adequately strengthened for delivery of improved farming techniques to the farmers. To realize this goal, extension agents should be provided with necessary motivations such as allowances and transport facilities.

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