

ECONOMIC ANALYSIS OF CASHEW NUT MARKETING IN OKE-OGUN AREA OF OYO STATE Ikuejawa, Igbekele .I.¹, Nwali, Collins .S.¹, Adepoju, Oladoyin A.¹ and Obasi, Friday .A.²

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ABSTRACT

The study conducted economic analysis of cashew nut marketing in Oke-Ogun area of Oyo State and specifically, described the socio-economic characteristic of the respondents in the study area; examined the marketing channels for cashew in the study area; analyzed the profitability of cashew production in the study area and identified the challenges faced by cashew producers in the study area. Data for the study were collected through structured questionnaire and one hundred and twenty (120) respondents were used for the study. Descriptive statistics and inferential statistics were used to achieve the objectives of the study. The result of the study showed that majority (70%) of the respondents were male, while 65.8% are married and 25.0% are between the age range of 60 and above. 50.8% of the respondents were Christians, while 39.2% attained tertiary level of education with primary occupation of 48.3% and secondary occupation of 93.9%. 49.2% have their household size between the ranges of 4-6 having farming experience of 49.9% ranging from 1-10. These are results obtained from socio-economic characteristics of the cashew producers in Oke-Ogun Area. Moreover, the result revealed that 89.2% uses producers – consumers as their type of marketing channel. The results showed that challenges faced by farmers are market information asymmetry, weak and poorly operating co-operatives society, inadequacy of extension agents, absence of feeder roads, poor access to loan and storage facilities. The gross margin analysis is ₦802,151.28. Significant relationship existed between socio-economic characteristics of the respondents and their level of net profit realized from cashew enterprise. Primary occupation (p – value = 0.003). It was deduced that majority of the farmers are faced with different challenges like inadequate access to co-operative society, etc. It was therefore recommended that farmers should come together to form co-operative society so as to help enhance their marketing system that ensures maximum profitability in the long run.

Keywords: Cashew, market, constraints and Economic Analysis

1. INTRODUCTION

Nigeria is one of the top ten cashew nut producers in the world today, although it is a small holder crop and supplement for thousands of farmers across the country. A large number of people mostly in low-income groups generate an income from cashew as harvesters, local merchants and workers, associated with licensed buying agents, transporters, processors and exporters, (Adeigbe *et al.*, 2015). Cashew nut grows successfully in virtually all agro-ecological zones including the semi-arid areas, but with high concentration in the middle belt area in small holder farms and plantations. Cashew nut production comes from over 20 states. These includes Kogi, Oyo, Edo, Anambra, Enugu, Benue, Cross river, Plateau and Kebbi others inclusive, (Ezeagu, 2002). It was reported by Onuchi and Aiyelabowo, (2006) that in 1995, total hectares of land under cultivation was estimated at 40,000, with about 60% of the holdings owned by small holders, another 30% were available in the wild, while 10% was in the large and medium size commercial plantation sector. By the year 2,000 there were indications that total hectare has increase

significantly to about 10,000ha due to the involvement of some state government in cashew production. (Crusoe, 2006). Thus expansion was a direct result of the cashew production expansion programme of their various Agricultural Development Programmes (ADPs) and Tree Crop Units (TCUs) with a yield estimated at 700kg per hectare. The Cocoa Research Institute Nigeria (CRIN), which has national mandate on cashew production estimate national production to be around 70,000MT annually.

The annual world population of the cashew nut according to Opeke; (2005), and the main commercial product of the cashew plant is about 400,000 tonnes and more than 50% of this production comes from South Asia, East Africa, especially India, Vietnam and Tanzania. According to Asante *et al.*, (2001), India was rated as the world's largest producer of cashew, producing about 32% of world's 1,178million tonnes in 2001-2002 with the entire African continent sharing 28% of world's total within same period among 13 countries included in cashew production and in Sub-Saharan

Africa, Nigeria ranks fourth after Tanzania, Cote d'Ivoire and Guinea.

Today, Africa accounts for about 36% of the world cashew production. More so, cashew has for many years been used for food and income generation. The trees are usually grown for their kernels, which when roasted have a very pleasant taste Deckers *et al.*, (2001) and Cocoa Research Institute of Nigeria (2001) reported that raw nut which are much in demand in industrialized countries are processed into kernels that constitute a valuable export product for confectionery. They are used as an ingredient for making fruits paste candied fruit, canned fruit, jams, chutney, fruit juice, alcohol and vinegar. Another product is the cashew nut shell liquid (CNSL). It is greatly valued in international market as a raw material for brake and clutch linings, paints and vanishes. It is also used in lacquers, insecticides and fungicides.

According to Akintoye *et al.*, (2013), products of the cashew tree (kernel and apple) are under-utilized for income generation. There is still much wastage of the fresh apples on farms since a negligible portion is consumed by the harvesters, this wastage reduces the household income. It is thus, imperative that value addition to cashew apple and nut be explored. Nevertheless, Nigeria has recognized the potential economic value of cashew and had made a concerted effort to improve production of the crop. To this end, this study determines cash returns to farmers participating in cashew production by converting the apple and kernels to valuable product needed for commercial sales which will aid high profitability. The broad objective of this study was to analyze the economic analysis of cashew nut marketing in Oke-Ogun area of Oyo. The specific objectives are to: i. describe the socio-economic characteristic of the respondents in the study area; ii. examine the marketing channels for cashew in the study area; iii. analyze the profitability of cashew nut production in the study area and; iv. identify the challenges faced by cashew nut producers in the study area.

1.2 Test of Hypothesis

H₀: There is no significant relationship between the socio-economic characteristic of the respondents and their profitability in the study area.

2. MATERIALS AND METHOD

The study area is Oyo State, Nigeria. Oyo State is located in the South-Western Nigeria. It is located between latitude 7°3'N and 9°12'N north of the equator and longitude 2°47'E and 4°23'E east of the meridian. The average temperature is 27°C. Oyo consist of thirty-three (33) local government areas (LGAs). Oyo State Agricultural Development Project has divided the state into four agricultural zones and twenty eight (28) blocks for administrative convenience. Oke-Ogun which is one of the major zone in Oyo State, which is located at an elevation of 188 meters above sea level and its population amount 174,152, which is also located at latitude 7°19'60"N

and longitude 4°4'0" E in DMS, these area comprise majorly agricultural farmers in Oyo State due to their interest and love for agricultural product and regeneration of national economy ((World Resources, 1990).

2.2 Sampling Procedure

The study used two-stage sampling procedure. In first stage, six (6) communities namely :(Aiyetoro-Oke, Isemi-Ile, Iwere-Oke, Eruwa, Ilaji-Oke and Okeho) were purposively selected out of the eighteen (18) communities due to the dominance number of cocoa farms in these communities in the Local Government Area. Similarly, in the second stage lists of registered cocoa farmer were obtained from the community heads and from this list, 5% of the cocoa farmers population of each community were randomly selected with Aiyetoro-Oke having 20 respondents, Isemi-Ile having 30 respondents, Iwere-Oke having 25 respondents, Eruwa having 15 respondents, Ilaji-Oke having 20 respondents and Okeho having 10 respondents, which make a total of 120 respondents that were used for the study.

2.3 Data Collection

Data for the study were obtained mainly from primary source using structured questionnaires to elicit information to analyze the profitability of cashew production in Oke-Ogun Area of Oyo State.

2.4 Data Analysis

Both descriptive and inferential analytical statistics were used to analyse data in this work. The descriptive tools which were used include frequency and percentage were used to achieve objectives (i), (ii), (iv), while Inferential tools such as linear regression analysis was used to test the hypothesis, while objective iii was realized using gross margin analysis According to Akintonde *et al.*, (2013), gross margin is expressed as follow:

$$\text{Gross margin} = \text{GI} - \text{TVC}$$

The linear regression functional form is specified as:

$$Y = f(x_0 + x_1 + x_2 + x_3 \dots \dots \dots x_n)$$

Where Y = output/revenue from the cashew production

X₁ = Age (years)

X₂ = Educational level

X₃ = Marital status

X₄ = Primary Occupation

X₅ = Secondary Occupation

X₆ = Farming experience

X₇ = Access to extension agent

X₈ = Access to credit

3. RESULTS AND DISCUSSION

The result obtained were analyzed, presented and discussed based on the data collected from the one hundred and twenty (120) respondents and the result presented based on the objectives of the study.

3.1 Socio-economic characteristic of the respondents

The result on age as presented in Table1 showed that 20.8% of the respondents were within the age bracket of 40-49 years, while 24.2% were within the age

range of 60 and above. This shows that majority of the cashew farmers in the study area are predominantly adults in their advanced stage. This could be attributed to fact that this aspect of farming is unattractive to the youth.

According to the result shown in Table 1, it revealed that the household sizes of the respondents (35.0%) are between the ranges of 1-3 and 49.2% were between 4-6. While 8.3% are between 7 and above respectively. Average household size as indicated from the study appears to be a common feature of farmers within the study area irrespective of their level of education.

The analysis based on the survey on sex showed that 70% of the respondents were male while 30% were female. This may be as a result of lack of interest of female folk in agriculture especially cashew farming. Women are more engaged in other domestic activities as opposed to growing cash crops.

The result obtained based on their marital status depicts that 30.8% of the respondents in the study are singles, while 65.8% of the respondent of cashew farmers are married, while 1.7 are divorce and 1.7% are widowed. This however is in consonance with the information obtained on their age. Majority of the respondents are exposed to social and family

responsibilities, which makes them depend heavily on farming as their major source of income for the family.

The result as reported in Table 1 also shows that 39.2% of the respondents are Muslim, while 50.8% of the respondents are Christians and 9.2% are Traditional worshippers. There is high rate of Christians in the study area.

The result obtained based on their educational status indicated that 20% of cashew producers in the study area has no formal education, while 39.2% of the respondents has formal education up to tertiary level, these may be as a result of their flair for education. This points to the reason why a well over overage of their population thrive in agriculture.

The occupational distribution of the respondents revealed that 11.7% of the respondents are civil servants and 34.2% and 5.8% are artisans and traders respectively, but 48.3% of the respondents assume farming as their primary occupation.

The occupational distribution of the respondent based on the secondary interest revealed that 93.3% of the farmers choose farming as their secondary occupation, while 1.7% and 3.3% are civil servant and traders respectively. Only a handful of 0.8% are artisanal.

Table 1: Distribution of the respondents based on their socio-economic characteristics (n = 120)

| Variables | Frequency | Percentage | Mean |
|---------------------------|------------------|-------------------|-------------|
| Sex | | | 50 |
| Male | 84 | 70 | |
| Female | 36 | 30 | |
| Marital Status | | | 25 |
| Single | 27 | 30.8 | |
| Married | 79 | 65.8 | |
| Divorced | 2 | 1.7 | |
| Widower | 2 | 1.7 | |
| Age | | | 16.6 |
| 10-19 | 2 | 1.7 | |
| 20-29 | 24 | 20.0 | |
| 30-39 | 22 | 18.3 | |
| 40-49 | 25 | 20.8 | |
| 50-59 | 17 | 14.2 | |
| 60 and above | 30 | 25.0 | |
| Religion | | | |
| Islam | 47 | 39.2 | |
| Christianity | 61 | 50.8 | |
| Traditional | 12 | 10.0 | |
| Educational status | | | 15 |
| Non formal Education | 24 | 20.0 | |
| Primary | 21 | 17.5 | |
| Secondary | 28 | 23.2 | |
| Tertiary | 47 | 39.2 | |

| | | | |
|-----------------------------------|-----|------|----|
| Primary Occupation | | | |
| Civil Servant | 14 | 11.7 | |
| Farming | 58 | 48.3 | |
| Artisan | 41 | 34.2 | |
| Trading | 7 | 5.8 | |
| Secondary Occupation | | | |
| Civil Servant | 2 | 1.7 | 25 |
| Farming | 112 | 93.3 | |
| Artisan | 1 | 0.8 | |
| Trading | 4 | 3.3 | |
| Household Size | | | |
| 1-3 | 42 | 35.0 | 5 |
| 4-6 | 59 | 49.2 | |
| 7 and above | 10 | 8.3 | |
| Farming Experience (Years) | | | |
| 1-10 | 60 | 49.9 | |
| 11-20 | 17 | 14.1 | 15 |
| 21-30 | 24 | 20.0 | |
| 31-40 | 14 | 11.2 | |
| 41 and above | 5 | 4.1 | |

Source: Field Survey, 2018

3.2 Marketing Channel of Cashew Producers in Oke-Ogun Area

In other to identify the major marketing channel in the environment there is need to evaluate the various marketing channel to customers.

The result in Table 2 according to the analysis shows that 89.2% of the respondent market their produce

mostly through producers to customers direct this may be as a mean of eliminating the transactions of middlemen which takes most of the profit of farmers and reduces farmer's income. But 37.5% uses the producers to wholesale to customer's relation which as the lowest percentage in the marketing channel.

Table 2: Distribution of Respondent based on their Type of Marketing Channel (n = 120)

| Type of Channel | Yes | No |
|-------------------------------------|------------|-----------|
| Producer – Consumers | 107 (89.2) | 13 (10.8) |
| Producer – Retailer – Consumer | 89 (74.2) | 31 (25.8) |
| Producers-Wholesalers-Consumers | 45 (37.5) | 75 (62.5) |
| Producers-Agent-Wholesaler-Retailer | 86 (71.7) | 34 (28.3) |

Source: Field Survey, 2018

Figures in parenthesis are in percentage

3.3 Profitability of Cashew Production

The gross margin analysis was used to determine profitability of cashew production and is given as:

$$GM = GI - TVC$$

Where: GM = Gross Margin

GI = Gross Income

TVC = Total Variable Cost

$$\text{Therefore: } GM = \text{₦ } 1,152,000 - \text{₦ } 349,848.72 = \text{₦ } 802,151.28$$

The result of the gross margin analysis is presented in Table 3. The result shows that total variable cost of cashew producers per farmer is given as ₦ 349,848.72, while the gross margin per farmer is given as ₦ 802,151.28 when the gross income per farmer is ₦ 349,848.72. However, it can be deduced from the result that farming and marketing of cashew in the study area is profitable.

Table 3: Average cost and Returns to Cashew production and marketing per season in Oke-Ogun area of Oyo State.

| Cost and Return | Amount ₦ |
|--|------------|
| Total variable cost/farmer/harvest/yr | |
| Cost of transportation | 15,414.17 |
| Cost of storage | 13,626.25 |
| Cost of labourers for all farmers | 320,808.3 |
| Total | 349,848.72 |
| Gross income/farmer/yr | |
| Amount per bag of 50kg | 32,000 |
| Quantity sold per harvest/yr in bags(50kg) | 36 |
| Total Income | 1,152,000 |
| GM | 802,151.28 |

Source: Field Survey, 2018

From the table above, one can deduce that the analyzing the cost and returns shows that after subtracting the various cost of production from the total income, the profit (Y) is then known for the 120 respondents as ₦90,754,770 and for a single farmer earn ₦756,289.8 at the end of every financial year which makes cashew product profitable in the study area. Hence, the average rate of returns to total investment was 25.8%. This implies that cashew production is profit venture in the study area and this supports the findings of Decker *et al.*, (2001) that cashew production requires minimum inputs at less cost with high level of returns to the farmers.

3.4 Constraints Faced by Cashew Producers

From the result as presented in Table 4, majority of the respondents testified that inadequate co-operative society is their major challenge in the study area since it has the highest level of mean value, while inadequate tools and equipment needed in production is the lowest challenges they have in the environment since it has the lowest mean value. This implies that there is need for a functional farmers' co-operative society in the study area which will help them to gain access to improved seeds, agricultural loans and other benefits from the government. This will invariably enhance their overall productivity within a short period of time.

Table 4: Constraints to production and marketing of Cashew in the study area

| Variable | Frequency | Percentage |
|------------------------|-----------|------------|
| Transportation | 37 | 26.1 |
| Inadequate cooperative | 29 | 21.1 |
| Price fluctuation | 30 | 29.4 |
| Low demand | 4 | 4.4 |
| Finance | 7 | 5.6 |
| Storage problem | 19 | 7.2 |
| Inadequate equipment | 14 | 6.2 |
| Total | 120 | 100 |

Source: Field Survey, 2018

Improving and understanding the challenge of the cashew farm in the study area which are of different opinion of the respondents and their involvement in agricultural activities which elevate their standard of living and reduction of the challenges faced during farming. To find out their situation a question with three scale choices was included in the survey for whose means as not sever, severe and very sever due to the challenges the face during the cashew production.

3.5 Relationship between Socio-economic characteristic and profit of cashew producers.

The results on table 4.5 reveal the relationship between the socio-economic relationship and the profit of the cashew production. These explain that age of the respondent, religion, educational status, secondary occupation are statistically insignificant to the profitability of cashew, while primary occupation (significant = 0.003) is statistically significant to the profitability which implies that the ability to make cashew production their major occupation increase their level of profitability in cashew production.

Table 5: Relationship between the socio-economic characteristics and profitability

| Variable | Co-efficient | Std error | T-value | P-value | Decision |
|------------------------|--------------|-----------|---------|---------|----------|
| Age | 0.125 | 343.9 | 0.883 | 0.379 | NS |
| Marital Status | 0.033 | 742.6 | 0.312 | 0.755 | NS |
| Religion | -0.032 | 527.1 | -0.340 | 0.734 | NS |
| Educational Status | -0.159 | 383.9 | -1.399 | 0.165 | NS |
| Primary occupation | -0.321 | 523.1 | -3.043 | 0.003 | S |
| Secondary occupation | 0.105 | 264.7 | 1.102 | 0.273 | NS |
| R ² = 0.109 | | | | | / |
| F = 3.595 | | | | | |

Source: Field Survey, 2018

NS = Not Statistically Significant

S = Statistically Significant

$P < 0.005$ = s = significant

$P > 0.005$ = s = not significant

4.0 CONCLUSION AND POLICY IMPLICATION

Evidence provided in this study has shown that majority of the cashew farmers are faced with different challenges like inadequacy/lack of access to improved farm inputs; unavailability of personnel with the requisite knowledge on improved system of farming; problem of land. Since land is a fixed asset, the farmers are always faced with the challenge of how to expand the available land for optimum productivity. As a result of this, they are forced to depend on subsistence. More so, there are extensive bottlenecks created by middlemen who sought for means of exploiting the farmers. From the result obtained from the study, it is quite obvious that marketing activities were concentrated in the hands of middlemen who make overwhelming profits at the mercy of the farmers who are the producers of this commodity. This makes the farmers end up with meager profit. The low level of organized outlets for cashew production, processing and marketing in Nigeria is as a result of lack of awareness of the commercial value of this crop. The pricing system of cashew was mostly affected by the seasonality and nature of the supply which affects the demand for it at a given period of the year. Poor access to loan has been another challenge that the respondents in the study area. Furthermore, analyzing the cost and returns shows that after subtracting the various cost of production from the total income, the profit (Y) is then known for the 120 respondents as ₦90754770 and for a single farmer earn ₦756289.8 at the end of every harvested year which make cashew product profitable in the study area. Hence, the average rate of returns to total investment was 25.8%. This implies that an average profit of ₦ 0.28K was realized on every naira invested in cashew Production in the study area. This supports the findings of Decker et al., (2001) who affirms that cashew production requires minimum inputs at less cost with high level of returns to the farmers.

5.0 RECOMMENDATION

Based on the findings, the following recommendations were proffered: Farmers should come together and form co-operative society in order to attract some packages in form of farm subsidies, agricultural inputs such as improved varieties of cashew seedlings, agrochemicals and in some cases, financial assistance from the government; also, there should be an organized marketing system by the farmers. This will enable them generate more profit from their produce while still combating the problem of product glut within the harvest season. Moreover, government should encourage farmers who engage in cash crop production (especially cashew) by introducing good agricultural policies that will ensure that farmers are compensated when there is excessive produce in the market. Most importantly, farmers/marketers, policy makers on agricultural commodity marketing and all other stakeholders should ensure quality nuts and the edible flesh devoid of immature ones, proper harvesting techniques in terms of methods and timing as well as to observe good hygiene practices in drying, sorting and packaging.

REFERENCES

- Adeigbe O.O., Olasupo F.O., Adewale B.D., Muyiwa A.A., (2015). A review on Cashew. Akinwale, S.A. and E.B. Esan, 1989. Advances in cashew breeding in Nigeria. In: Progress in Tree Crop Research, 2nd Edn. *Cocoa Research Institute of Nigeria (CRIN), Ibadan, Nigeria, pp: 166 – 174.*
- Akintonde, J. O, Awoyemi, S.O. and Akintato, O. S (2013) Economic analysis of cashew nut among produce buyers in Ogbomosho metropolis of Oyo State, Nigeria. *International journal of agricultural innovations and research*, 2(1). 130-136
- Asante, A. Boamah, E.A. Ayodele and Adebola, P.O. (2001). *West African Regional Cashew Survey Report (Guinea, Guinea Bissau, Cote d'Ivoire, Ghana and Nigeria)*. Sustainable Tree Crop Programme (STCP) and Biohybrids Agrisystem Limited, UK, 1: 110.
- Cocoa Research Institute of Nigeria (2001): Cashew Research Programme and Achievement (1970 – 1990), Ibadan, Nigeria.

- Crusoe O., (2006). Nigeria Investment Guide. A bi-annual investment journal. Cashew processing in Nigeria. 1(1); 10 – 12. January – June, 2007.
- Decker J., Cundall S.H., Shomari., Ngatunga A. and Bassi G., (2001). Cashew crop production in tropical Africa, Romain H. Reamakers (Ed) published by directorate general for international cooperation (DGIC), Brussels, Belgium pp 236 – 238.i S.C. Publication of the Raw Materials Research and Development Council, Abuja. 6(1); 32.
- Ezeagu W., (2002). Assessment of the situation and development prospect for cashew nut sector. A report of Nigeria export promotion council, Abuja, Nigeria.
- Onuchi E., and Aiyelabowo V., (2006). Nigeria Investment Guide. A bi-annual investment journal. Cashew processing in Nigeria. 1(1); 16-17. January, 2006.
- Opeke L.K. (2005). Tropical commodity tree crops. Spectrum books limited, Ibadan, Nigeria, 360: 371 – 37 Research and Production in Nigeria in the Last Four Decades. *J. Sci. Res. Essays*.
- World Resources Institute (1990) World Resources (1990-1991), retrieved from <https://en.m.wikipedia.org> on 10th March, 2018.