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Role of Women in Oil Palm Fruit Processing and Marketing in Imo State, Nigeria

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Abstract: The study was designed to investigate the role of women in oil palm fruit processing and marketing in Mbaitoli Local Government Area (LGA) of Imo State. The study also analyzed the constraints militating against the participation of women in processing and marketing. The financial viability of oil palm fruit processing was determined. Data for the study were obtained from oil palm fruit processors and marketers with the aid of structured questionnaire which were administered on 38 oil palm fruit processors and 12 marketers of the product randomly selected. Descriptive statistics such as percentages tables, means and frequency distribution was used in the analysis. Regression analysis was used to analyse the socio economic variables affecting the income of women processors. The result of the regression showed that the socio-economic variables such as, the number of years spent in school, the method of palm oil extraction and the type of palm fruit used, were positively correlated with the income of women processors and significant at 5% level of significance. The variables, household size is significant at 5% level but negatively correlated the income from processing. The variable type of palm fruit was found to be negatively correlated with income from processing and significant at 5%. The cost and return analysis showed that palm oil processing is profitable in the study area as every N1.00 invested yielded 0.68K gain. The Net farm income was found to be N150,304.00 per year per processor. Problems such as access to capital, limited access to extension services, lack of ownership of land, high processing cost, price fluctuation and women domestic activities amongst others were militating against women processors and marketers. The study recommended modern and efficient processing mills and other labour saving technologies, access and control over land and capital, as well as women education.

Key words: Role of women, oil palm fruit processing, marketing, LGA, Nigeria

INTRODUCTION

In different agro-ecological zones of Nigeria, women are predominantly engaged in the processing and marketing of oil palm fruit. In the study area which is Mbaitoli Local Government of Imo State, a good number of woman are into processing and marketing of oil palm fruit which is basically for consumption and for sale. Report has it that women are responsible for at least 70% of food production in African and are also important in marketing cash cropping and animal husbandry. FAO (1996) reported that women contribution to labour in Africa is about 33% of the work force, 70% of the production of food for household consumption and sale, 90% of the basic processing of food stuff 80% of food storage and transport 66% of harvesting and marketing activities. Adeyeye (1984) noted that women spent about 1.4 h a day in food processing and marketing while only 0.25 h is spent by men on the same activity. Ibe and Nweke (1981), Ona (1987) and Ogbonna (1989) also indicated that female labour are more productive than the male labour in food processing and also that women account for more than half of the labour force in palm oil processing and marketing. Before the boom in petro-oil sector which has become the mainstay of the economy, the Country depended on agriculture particularly oil palm fruit processing and marketing in the south eastern state. But during the past decades, the country has become an importer of palm oil from malaysia. Nigeria's palm oil production which in the past accounted for 43% of the world production now only account for 7% of the world production (National Agricultural Project, 1997).

Not withstanding this rapid decline, oil palm fruit processing and its marketing still provides for about 80% of rural small scale farmers in which women forms a great percentage. However, with the tripartite burden of child bearing, domestic chores and agricultural activities, women in the study area are sand witched between several constraints in the processing and marketing of oil palm fruit. Despite the constraints, the participation of women in processing and marketing of oil palm fruit is increasing at a fast rate as a result of the demand of the growing urban population for palm oil. Since, the major processors and marketers of oil palm fruit are the rural farm households in which majority are women, the study was targeted at the role of women and their constraints in

the processing and marketing of oil palm fruit in Mbaitoli LGA of Imo State as a means of improving production of palm oil in the study area and the state in general. Often women's voices are ignored when research priorities are set and their needs are therefore not addressed. But the fact that women contribute immensely in socio-economic development of the rural areas with less authority and opportunity than men implies that the socio-economic constraints militating against their efficient resource management must be fully understood. This would suggest possible solutions to their efficient performance. This is particularly important in the study area where oil palm fruit processing and marketing is an increasing occupation of the rural inhabitants. This study therefore analyzed the activities of women in oil palm fruit processing in Mbaitoli LGA of Imo State.

MATERIALS AND METHODS

Oil palm fruit marketing is said to involve the total of all the business activities performed in the movement of palm oil from the point of initial production until it reaches the hands of the ultimate consumer. Fapohunda (1989), noted that 80% of rural traders are women. He also pointed out that rural agricultural produce including palm oil are marketed by woman.

The study area was Mbaitoli Local Government Area (LGA) of Imo State, Nigeria which covers an area of about 238 sq km^{-1}. The area is bounded in the East by Ikeduru L.G.A and in the West by Ohaji/Egbema, Oguta and Oru in the North, Nkwere and Isu, in the South. The Area is made up of nine autonomous Communities. The area is within the rain forest region, with average annual rainfall of about 200 mm. The rainfall distribution pattern and the tropical equatorial climate of the area give rise to 2 distinct seasons namely: Rainy season starting from March to September and dry season starting from October to February. The vegetation of the area is that of thick forest. This climatic factor and rainfall distribution pattern makes the study area suitable for cultivation of oil palm tree. Data were collected using questionnaires. The respondents were interviewed weekly. Information obtained include socio-economic characteristics such as, age, education, occupation, c household size etc. Also information was collected on the techniques of processing, source of palm fruits, costs and returns of the palm produce.

Stratified random sampling was used in collecting information from 5 communities purposely selected for this study on the basis of availability of research information. These communities include; Ogwa, Mbieri, Orodo, Afara and Ogbaku, Random sampling technique was also used in the selection of 10 respondents from each of the 5 communities from a list woman oil palm fruit processors and palm oil marketers compiled for this study. These 10 respondents was made up of 8 oil palm fruit processors and 2 palm oil marketers from each of the selected communities, this gave a total of 50 respondents which are women as the sample size. The information gathered was analysed using descriptive statistics such as tables, frequencies, means and percentages. Also regression analysis was done to analyse the socio-economic factors affecting palm oil and oil palm fruit processing. A budgeting technique was used to determine the costs and returns of oil palm fruit processing the regression analysis was performed using the ordinary least square method of analysis: The implicit model is specified in the study. Four functional forms were tried, they are linear, exponential semi-log and double log forms. The lead equation was chosen on the basis of R^2, F-ratio, t-ratio and a priori expectations:

$$Y = f(X_1, X_2, X_3, \ldots, X_5, U)$$

Where,

Y = Value of palm oil produced per year (Naira)
X_1 = No. of years spent in school
X_2 = Method of extraction (Dummy: 1 = modern, 0 = traditional/indigenous)
X_3 = Household size
X_4 = Type of palm fruit used (Dummy: 1 = Improved, 0 = local)
X_5 = Age of processor in years
U = Error term

The hypothesis for this study is that there is no significant relationship between income of women in oil palm fruit processing and the specified socio-economic variables. For the cost and return analysis of oil palm fruit processing the analysis was done with the model specified below:

$$TC = TVC + TFC$$

Where,

TC = Total Cost (N)
TVC = Total Variable Cost (N)
TFC = Total Fixed Cost (N)

With respect to the Net farm income, the model is specified:

$$NFI = TR - TC$$

Where,
NFI = Net Farm Income (N)
TR = Total Revenue (N)
TC = Total Cost - (N)

The model for financial viability of oil palm fruit processing was the benefit-cost ratio model which indicated the return per capital:

$$B/CR = \frac{TI}{TC}$$

Where,
B/CR = Benefit Cost Ratio
TI = Total Income
TC = Total Cost.

RESULTS AND DISCUSSION

Analysis of the socio-economic variables associated with women processors of oil palm fruit showed that 58% of the respondents spent not less than 6 years in formal institution this holds some promise for adoption of improved method of process in the study area. Majority of the women processors use the traditional/method of extraction which is hydraulic hand press. They represent 76% of the respondents. This may be attributed to low purchasing power or investment capital among the women farmers. This has implication for vicious cycle of poverty. The mean household size in the study area was found to be 8 persons per house hold. This large household size also means more hands to feed. Analysis of the type of variety processed showed that majority of the women processors 62% make use of improved variety of palm fruit in processing, this is associated with the ability of the improved varieties to produce more oil per seed processed. The mean age of the women processors was found to be 45 years of age. This showed that the women are in their middle ages. This middle age holds promise for adoption of innovations: The number of years spent in school (X_1), method of palm oil extraction (X_2), household size (X_3), type of palm fruit processed (X_4) and age of processor (X_5) and the value of output were subjected to regression analysis using The 4 functional forms tried were linear, exponential, semi log and double log. The result of the lead equation which is the semi-log model is presented in Table 1.

The result of the regression analysis showed that the number of years in school (X_1) was positively correlated with income and significant at 5% level of significance. This shows that education is an important variable which can increase the processors income. This education can come in form of informal and formal education. The variable method of extraction (X_2) was found to be positively correlated with the processors income and also significant at 5% level of significance. This shows that modern method of extraction is superior to the traditional method of extraction but it should also be noted that the modern method of extraction requires increased investment. The variable household size (X_3) was found to be negatively correlated with the processors income but significant at 5% level of significance. This indicates that increase in the number of household size leads to decrease in the processors income. This could be attributed to the fact that majority of the members of the household are children with high marginal propensity to consume rather than produce. The variable type of palm fruit (X_4) was found to be positively corrected with processors income and also significant at 5% level of significance. This shows that the Improved palm fruits produce more oil per unit of processed palm fruit than the local and unimproved type. This therefore translated to more income to the processors. The variable age of processor was negatively correlated with processors income and not significant at 5% level of significance. This shows that the income of the processors decreases with age this is in line with life cycle hypothesis, unless the processors have enough money to hire labour. Since 4 parameters were found to be significant at 5% level, the null hypothesis of no significant difference among the independent variable estimates was rejected at 5% level of significance. This means the acceptance of alternative hypothesis.

Table 1: Parameter estimates of the semi-log-regression model

Variables	Estimated values	Standard error
Constant	221,601.26	49,294.75
No. of years in school (X_1)	47160.25*	7937.31
Method of extraction (X_2)	26041.27*	12891.72
Household size (X_3)	-58553.85*	12860.36
Type of palm fruit used (X_4)	11098.78*	5045.50
Age of processor (X_5)	-6188.36	10055.32
Value of output (y)		

Source: Field data, 2004; *: Significant at 5%; t(tab): 2.021; F (cal): 47.17
R^2: 0.84; Adj R^2: 0.83; No. of significant variables = 4

Cost and returns analysis: The production cost analysis comprised the total cost which is made up of fixed cost and variable cost items. The revenue generated is made up of the value of palm oil production per year and other products from processing of oil palm fruit such as palm kernel oil, shell and palm kernel residue, The fixed cost items are presented in Table 2.

The variable cost item with the highest cost is the cost of the palm fruits which has average cost of N52566 per year and this accounts for 78.4% of the total variable cost. This is presented in Table 3. The least

Table 2: Fixed cost items in oil palm fruit processing

Type of asset	Average No. household	N cost of item	Life span	Depreciation N
Milling machine	1	52,000	15	3466.7
Processing	1	7714.68	4	1929
Mortar	2	1700	3	566.7
Pestle	4	600	3	200
Shovel	2	3000	4	750
Buckets	2	900	3	300
Drums	1	1200	4	300
Baskets	4	500	1	500
Boiling pots	2	1200	5	2400
Knives	3	1050	3	350
Head pan	2	1000	3	333.3
Jerry Can	5	750	1	750
Scarifying stick	2	100	3	33.33
Total		N30514.68		N11879

Source: Field data, 2004

Table 3: variable cost items

Variable cost item	Amount N/yr	Percentage
Harvesting	2,044	3.1
Processing cost	3,215	4.5
Cost of palm fruits	52,566	78.4
Haulage cost	762	1.1
Total	58.587	100.0

Table 4: Revenue from oil palm fruit products

Item	Average income per farmer (N/yr)	Percentage revenue
Palm oil	198120	89.7
Palm kernel oil	16500	7.5
Shell	5500	2.5
Palm kernel residue	650	0.3
Total	220770	100.0

Source: Field data 2003

variable cost item was found to be the cost of haulage which is N762 and this accounted for only 1.1% of the total variable cost.

Table 4 shows the revenue derived from oil palm fruit processing. The major revenue item is palm oil and it has the highest share of 89.7% of the total revenue generated. Other items that generate income are palm kernel oil, shell and palm kernel residue. From the table the least income generating item is palm kernel residue which stood at N650.

The Net farm income was estimated using the equation:

$$NFI = TR-TC$$
$$TC = TVC+TFC$$

Where,
NFI = Net Farm Income (N)
TR = Total Revenue (N)
TC = Total Cost (N)
FC = Fixed Cost

Therefore
NFI = 220770-70466
= N150,304

The Benefit Cost ratio (B/C): The benefit cost ratio was estimated by dividing the net farm income with the total cost:

$$B/C = \frac{\text{Total benefit}}{\text{Total cost}}$$
$$= \frac{150,304}{70466}$$
$$= 2.13$$

Since the Benefit Cost ratio (B/C) is 2.13 it is greater than one and it shows that the oil palm fruit processing is profitable in the study area. This showed that the enterprise is more than 200% profitable.

CONCLUSION

The research was mainly to analyze oil palm fruit processing by women in Mbaitoli L.G.A of Imo State, Nigeria. The cost and return analysis showed that the venture is profitable with a benefit cost ratio of 2.13. The study showed that the important determinants of income among the women were, education. Method of extraction, household size and type of palm fruit processed. Since most of the products from oil palm fruit processing serve as basic input for manufacturing industries, it is pertinent to increase the awareness of the potentials of oil palm fruit processing to ameliorate unemployment and improve the womens standard of living. Policy issues therefore need to address the promotion of women in oil palm fruit processing and marketing through women empowerment for access to vital processing inputs. This will improve womens income and a could go a long way to reducing the importation of palm oil in the country, thereby bringing the country closer to sustainable production of palm oil and other associated products.

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