

Full Length Research Paper

Oil Palm Processing Among Farmers in Imo State: Implications for Market Orientation and Entrepreneurship in Extension Practice in Nigeria.

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This study investigated oil palm processing among farmers in Imo State with focus on socio-economic characteristics, cost and returns, factors of oil palm processing, and highlighted implications for market orientation and Entrepreneurship in Extension practice in Nigeria. Purposive, multi-stage random techniques were employed to select 160 respondents, while structured interview schedule was adopted in data collection and both percentages, Gross Margin and Multiple Regression were employed in analysis. The results showed that majority (63.8%) of the farmers were females, while large (68.7%) numbers had either TC II, OND or NCE qualifications. Majority (74.1%) of the farmers were married and 57.6 percent had estimated equity income of N51,000.00 to N150,000.00. The average quantity of palm oil produced per month was 75.16 litres with revenue of N13, 267.02 at the total cost of N8,052.5, while the Gross Margin was N5,664.43 with a net revenue of N5,214.43 and a benefit ratio of 1.64 [with gross ratio of 0.61]. Income, cost of processing, membership of cooperatives and size of oil palm plantation were positively significant with output at 1% and these constituted implications for market orientation and Entrepreneurship in Extension practice. The study recommended government improved funding and provision of credits, formation of cooperatives among farmers and institutional linkages and involvement of market orientation and entrepreneurship in extension training for farmers. In conclusion, sustainable extension practice in oil palm processing towards market orientation and entrepreneurship in Imo State, Nigeria depends on the extent issues raised on costs and returns as well as related factors can be addressed.

Keywords: Oil palm processing, market orientation, entrepreneurship, extension, Nigeria

INTRODUCTION

Oil palm (*Elias guineensis*) is one of the most important economic oil crops in Nigeria. Oil palm whose origin is traced to West Africa within the tropical rain forest is indigenous to the Nigerian coastal plains (World Rainforest movement, WRM, 2001; Olagunji, 2008). Oil palm often referred to as a crop of multiple values of economic importance is prone to generic, age, agronomic, environmental and processing factors (FAO, 2002). One major way of obtaining the economic values of oil palm is through processing into palm oil, palm kernel and alcoholic beverages (Akangbe et al., 2011; FAO, 2002; Tang and Teoh, 1995).

Laying credence to the foregoing values are additional values of oil palm such as kernel oil and palm kernel cake as well as other industrial products with potentials

for market orientation and entrepreneurship in extension practice in Nigeria. In Imo State Nigeria oil palm processing serves as additional sources of income, dietary nutrients and employment to large population of resource-poor farmers in the State. Earlier research reports by Akangbe et al. (2011) have described oil palm processing in Nigeria to be highly characterized by crude and inefficient. The CBN/NISER, (1992) had blamed low productivity in the oil palm sub-sector on inadequacy of the processing activities basically because of issues related to socio-economic background of farmers, high cost of labour, inadequate infrastructure, absence of credit and poor extension services. The question is, to what extent has oil palm processing effort in Nigeria taken these socio-economic and related factors into

consideration as necessary requirement for desirable transformation in oil palm predominant economy of Imo State?

Furthermore, major challenge in the oil palm sub-sector has been blamed on low market orientation due to high free fatty acid (FFA) contents of extracted palm oil between 10-30% and 5 -10% as against a standard of 5% or less (Mhanhmad et al., 2011). Evidently, oil palm processing has critical contributions to income generation, occupation and sustainable dietary regime in Imo State, Nigeria. Against the backdrops of increasing dietary demands for palm oil relative to rapid increases in population and abundant oil palm plantation, Imo State, has been a major importer of palm oil in Nigeria.

Issues relating to socio-economic characteristic of farmers, costs and returns as well as factors were implicit for orienting towards market with attendant entrepreneurship. Pertinent questions are therefore, necessary to address oil palm processing towards market orientation and entrepreneurship in Imo State, Nigeria. What are the socio-economic characteristics of farmers who engage in oil palm processing in Imo State, Nigeria? What are the costs and returns on oil palm processing? What factors influence oil palm processing in Imo State, Nigeria? What specific oil palm processing issues have implications for market orientation and entrepreneurship in extension practice in Nigeria?

The purpose of this study was to investigate oil palm processing among farmers in Imo State and highlight implications for market orientation and entrepreneurship in extension practice in Nigeria. Specifically, the objectives described the socio-economic characteristics of oil palm farmers in Imo State and determined the costs and returns to palm oil extraction among the farmers. Other objectives also ascertained factors which influenced outputs of oil palm and highlighted implications for market orientation and entrepreneurship in extension practice in Nigeria.

METHODOLOGY

Thus study was carried out in Imo State, Nigeria made up of three Agricultural zones namely; Okigwe, Orlu and Owerri. The State is made up of twenty-seven local government areas (LGA) namely; Aboh Mbaise, Ahiazu Mbaise, Ehime Mbano, Ezinihitte, Ideato North, Ideato South, Ihitte/Uboina, Ikeduru, Isiala Mbano, Isu and Mbaitolu. Others include, Ngor Okpala, Njaba, Nkwerre, Nwangele, Obowo, Oguta, Ohaji/Egbema, Okigwe, Onuimo, Orlu, Orsu, Oru west, Oru East, Owerri West, Owerri Municipal and Owerri North. Imo State is made up of farmers while some inhabitants engage in trading, artisanship and civil service. The population is about 3,734,899 made up of 2,032,286 males and 1,902,613 females (NPC, 2006).

Both purposive, multi-stage and random sampling techniques were employed. Two Agricultural zones namely; Okigwe and Owerri were purposively selected basically because of the intensity of oil palm processing activities in the zones. In the first stage, two Local Government Areas (LGAs) namely; Ezinihitte and Obowo were purposively selected. The second stage involved random selection of 2 autonomous communities each from the LGAs involved namely; Okwuhia and Alike from Obowo and Amumara and Ihitte from Ezinihitte. In the third stage, 2 villages each from the communities involved were randomly selected, while the fourth stage involved random selection of 20 oil palm farmers from each of the villages involved. Thus a total of 160 randomly selected oil palm farmers constituted the sample size for the study.

Data for this study were mainly from primary source, while secondary data were collected from previous research reports, textbooks and journals and they were employed to amplify the primary data. However, primary data were collected with the use of structured interview schedule which was organized in sections to reflect the specific objectives. Both descriptive statistics and inferential such as Gross Margin and Multiple Regression were the analytical tools employed in data analysis.

RESULTS AND DISCUSSION

Data in Table I show that majority (63.8%) of the oil palm farmers were females, while only 36.3 percent of them were males and majority (74.4%) were married. Majority (66.3%) were within ages of 31 – 50 years, while large (68.7%) numbers of them have either TC II, OND or NCE qualifications. The result indicated that most farmers who engaged in oil palm processing were females and the farmers were within adult ages and had basic education to comprehend necessary information to bolster their knowledge on market orientation and entrepreneurship. Both Blum (1991) and Madukwe (1996) noted education as a facilitating factor in any extension practice. Other reports by Nwaru and Iwuji (2005) reported that education has positive relationship with marketing margin because of training advantage. The Basic education among farmers revealed by this study could be employed under any extension practice to facilitate market orientation and entrepreneurship in oil palm processing in Imo State, Nigeria.

Majority (64.4%) of the farmers have household sizes of 6-10 members, while majority (70.7%) of them have 6-15 years of oil palm processing experience and large (63.1%) numbers had estimated equity income of N51,000.00 – N150,000.00 accruing from oil palm processing. Equity capital indicates the farmers' owned investment capital expressed as a percentage of the

Table 1: Percentage distribution of oil palm farmers according to their socio-economic characteristics (N=160)

Socio-economic variables	Frequency	Percentages (%)
Gender: male	58	36.3
Female	102	63.8
Marital status: single	25	15.6
Married	119	74.4
Widowed	16	10.0
Age (yrs): ≤ 20 years	13	8.1
21 – 30	32	20.0
31 – 40	65	40.6
41 – 50	41	25.6
51 years and above	19	11.9
Levels of formal education		
No formal education	10	6.3
FSLC	32	20.0
WASC/SSCE/GCE O/L	52	32.5
TCII	32	20.0
OND/NCE	19	11.9
HND/B.A/BSC/BED	14	8.8
MSC/MA/MED/MBA and above	11	6.9
Household size (No)		
≤ 5	24	15.0
6 – 10	13	64.4
11 – 15	20	12.5
16 – 20	14	8.8
21 and above	9	5.6
Processing Experience (years)		
≤ 5	20	12.5
6 – 10	75	46.9
11 – 15	38	23.8
16 – 20	15	9.4
21 years and above	12	7.5
Estimated Equity Income (₦)		
≤ 50,000:00	33	20.6
51,000.00 – 100,000.00	40	25.0
101,000.00 – 150,000.00	61	38.1
151,000.00 – 200,000.00	14	8.8
201,000.00 and above	12	7.5

Source: Field survey, 2013

total assets of the business enterprises (Ezike, Nwibo and Odoh 2009). With the estimated equity income of N51,000.00 – N150,000.00 among farmers oil palm processing is affordable, demand, driven and could be implemented towards market orientation and as entrepreneurial enterprise in extension practice in Imo State, Nigeria.

Cost and returns on oil palm processing among farmers in Imo State.

Data in Table 2 showed gross margin on costs and returns on oil palm processing among farmers for the

year ended 31st December, 2012. The results show average quantity of oil palm processed per month was 75.16 litres with revenue of N13,267.02 at the total cost of N8,052.5

Table 2 indicates that N7,602.59 was expended as total variable cost (TVC), while N450.15 was depreciated on capital input as fixed cost (FVC) giving total cost (TFC+TVC) of processing palm oil as N8,052.59. The gross margin (GM) was N5,664.43, while the net revenue was N5,214.43. Palm oil processing in Imo state was profitable because the net revenue was positive and a benefit cost ratio (BCR) of more than one (1.64) was obtained. The study therefore corroborates with Onyebinama (2003) who reported that when a

Table 2: Cost and Return Analysis for oil palm processing in the study Area (Monthly)

Items	value (N)
Returns	
Revenue from palm oil (75.16 litres x 154.83 per litre)	11,637.02
Palm kernel cracked	820
Palm kernel (uncracked)	650
Broom	180.7
Total revenue	13,267.02
Variable costs	
Purchase fruits	2,143.11
Diesel (21 litres x 166.0 per litre)	3,486.00
Labour	
Cutting of fruits	501.00
Conveying to the mill	203.00
Threshing	113.00
Boiling	100.00
Pounding	53.17
Pressing	150.15
Clarification	73.16
Cracking charges	300
Other cost (Transport, water, firewood)	480
Total variable cost (TVC)	7,602.59
Fixed Costs	
Depreciation for fixed cost item	450.15
Total Fixed Cost (TFC)	450.15
Total Cost = TFC + TVC	8052.59
Gross margin	5,664.43
Net revenue	5214.43
Benefit Cost Ratio: (TR/TC)	1.64
Gross Ratio (TC/TR)	0.61

Source: Field survey, 2013

project revenue is positive and benefit cost ratio of more than one is obtained that project is viable. The results imply that for every N1.00 spent in processing palm oil in Imo State, N1.64 was realized. Also the gross ratio (GR) was 0.64 which implies that from every N1.00 return to the project, N0.61 was being spent.

Factors which influenced oil palm output in Imo State

Data in Table 3 show the regression estimate of the factors which influenced oil palm produce (palm oil) extraction in Imo State. The results show that the semi-log functional form was chosen as the lead equation based on high R^2 value of 0.7793, number of significant variables (factors) and agreement with apriori

expectation. The R^2 value which indicated a 77.63% variability in quantity of palm oil produced was explained by the independent variables. The F-value (34.96) was highly significant at 1% level of probability indicating a requirement of best fit.

Table 3 revealed that the coefficient for income, cost of processing, membership of cooperatives societies and size of palm plantation were positively significant and highly significant at 1% level of probability. Adequate income will help significantly in offsetting the cost of processing and improve the quality of oil palm produce, while membership of cooperative societies will afford the group power needed by the farmers to procure necessary equipment. This implies that both quantity and quality of oil palm produce (palm oil extracted) depend on the income, cost of processing, membership of cooperative. Since the cost of processing is high, the

Table 3: Regression Estimates of Factors influencing oil palm produce output

Variable	Linear	Exponential	Cobb Douglas	Semi-Log
Constant	-3353.94 (-2.57**)	7.4963 (17.08***)	-3.0221 (-2.25*)	-323164.9 (-7.47***)
Processing	-965.68	0.0099	-0.0063	-2638.32
Experience	(-0.98)	(0.30)	(-0.09)	(-1.12)
Education	81.86 (0.24)	0.03051 (2.65**)	0.22728 (2.89**)	576.87 (0.19)
Income	131.63 (5.12***)	0.0474 (5.49***)	2.5401 (7.25***)	73856.36 (6.56***)
Household size	-1356.84 (-3.09***)	0.0532 (-3.60***)	-0.5431 (-405***)	-17486.89 (-4.06***)
Cost of processing	89.954 (7.56***)	0.0031 (7.74***)	0.7822 (10.72***)	21353.38 (9.11***)
Marital status	1066.49 (0.93)	0.0398 (1.03)	0.0407 (1.16)	116.76 (0.99)
Cooperative society	1466.76 (4.53***)	0.1977 (1.82*)	0.1276 (1.31)	13015.8 (4.17***)
Size of palm	425.59	-0.1007	-0.0174	(2946.32)
Plantation	(0.41)	(-2.92**)	(-0.58)	(3.06***)
Age	-7021.96 (-2.80**)	-0.2143 (-2.54**)	-02576 (-3.34***)	-7874.09 (-3.18***)
Occupation	3729.41 (1.10)	0.03633 (3.18***)	0.1996 (1.96*)	62.3187 (0.02)
R ²	0.7359	0.6583	0.7615	0.7793
R	0.7117	0.6270	0.7374	0.7570
F	30.38***	21.00***	31.60***	34.96***

Source: Field survey, 2013

farmers could make shift to combine and make use of their resources more efficiently in order to increase their output thereby generating more revenue to offset the cost of oil palm processing.

Implications of oil palm processing for market orientation and entrepreneurship in extension practices in Nigeria.

The result of this study indicated that oil palm processing with respect to palm oil extraction in particular is a viable

enterprise in Imo State Nigeria. The study revealed income, cost of processing, membership of co-operatives and size of oil palm plantation as prominent factors which influenced palm oil processing in Imo State Nigeria. These factors indicate major areas of implications for market orientation and entrepreneurship in extension practice in Nigeria. The implication of these results is that income is involved in oil palm processing to provide appropriate equipments, offset the cost of processing and improve the environment needed for branding extracted palm oil for high quality value as major step towards market orientation. The desirable

markets values will enhance higher profit margins and stimulate entrepreneurship in oil palm processing among the farmers.

The envisaged entrepreneurship may require relevant infrastructure in order to create conducive environment for favourable cost and returns relationship in oil palm processing and expose the farmers on ways to scale up their processing activities. The desirable scale up in activities underlines the need to influence the farmers by empowering them to be able to make informed choices in their large oil palm plantations. The envisaged choices will stimulate the farmers knowledge and attitude to pursue active roles for meaningful oil palm processing for desirable palm oil extraction and attendant entrepreneurship disposition. The envisaged entrepreneurship has implication for effective extension practice to provide training support and information needed to motivate the farmers to work in cooperative towards sustenance of increased palm oil output from their scaled up activities.

The envisaged extension practice requires government fund and logistic support to facilitate extension training to the farmers on market orientation and entrepreneurship in oil palm processing. The envisaged extension farmer training requires improved funding in order to improve the knowledge attitude and competencies of extension staff in orienting oil palm processing training towards market forces and entrepreneurship. This market oriented and entrepreneurship training requires appropriate arrangement to involve extension practice towards encouraging farmers to work as members of co-operative societies and involve training group and group participation. The scenario has implications for either increasing extension staff strength in Imo State Agricultural Development programmes (ISADP) and University extension outreach system with Imo as catchment state or improving incentives to the existing staff and providing training on market orientation and entrepreneurship to the Agriculture department or Community Development staff of the Local Government Councils to work with the ADP and University extension staff. The scenario has implications for institutional linkages between the University management and centres for entrepreneurship studies with the ADP.

CONCLUSION

This study investigated oil palm processing among farmers in Imo State and highlighted implications for market orientation and entrepreneurship in extension practice in Nigeria. This was based on the premise that oil palm processing activities within the high presence of abundant oil palm plantation in Imo State, Nigeria are fundamental for sustainable economic empowerment

and poverty reduction. Results of this study indicate that cost effective performance towards desirable goal in oil palm processing sub-sector hinge on market orientation and entrepreneurship in extension practice in Imo State, Nigeria. Critical factors identified to influence sustainable oil palm processing in the State included income, cost of processing activities, membership of cooperative societies and size of oil palm plantation. These factors were highlighted to have implications for market orientation and entrepreneurship in extension practice under the large oil palm ecology such as Imo State, Nigeria. Based on the foregoing, the study recommended government improved funding and provision of credits, formation of cooperatives among farmers and institutional linkages and involvement of market orientation and entrepreneurship in extension training for farmers. In conclusion, sustainable extension practice in oil palm processing towards market orientation and entrepreneurship in Imo State, Nigeria depends on the extent issues raised on costs and returns as well as related factors can be addressed.

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