Benefits derived by rural youths' involvement in oil palm enterprise in Ido local government area of Oyo State, Nigeria

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ABSTRACT

The economic contribution of oil palm among the oil producing crop to the sustainable agricultural productivity in Nigeria is high. This study assessed the benefits derived by rural youths' involvement in oil palm processing activities in Ido local government of Oyo state. A multistage sampling procedure was employed to select 120 respondents for the study. Data were collected via interview schedule on rural youth's socio economic characteristics, involvement in oil palm processing activities, support services needed and the benefits derived. Data were analysed using descriptive and inferential (Chi-square and PPMC) statistics. Results show that most of the respondents were female (79.2%), married (63.3%) with mean age of 26 .6±5.53years. They had oil palm processing as their primary occupation (87.5%) and used self labour (60.8%) with source funding being through personal savings (83.3%). A mostly identified benefit was the supply of raw materials to industries (215.9), engaging youths to prevent restiveness (214.2) and increased standard of living (209.8). More than half (52.2%) of the respondents had low level of support services. The respondents' involvement included crushing, digestion, and heating of the fruit (195.9) and separation of endocarp from the kernel (192.4). Significant relationship existed between involvement and sex (p=0.000), marital status (p=0.011), age (p=0.002) as well as benefits derived (p=0.000). The benefits derived by the involved youth could be sustained with improved level of the support services as they are strong enough to keep them in the enterprise.

Keywords: Support services, Standard of living, Palm kernel, Sustainable agricultural productivity.

INTRODUCTION

Oil palm a native of West African humid tropic has been regarded as the most efficient oilseed crop in the world. It is an important economic agricultural crop in Nigeria as the country was once the largest exporter of its products; this drew the attention of the World Bank to the promotion of the Oil palm business in the country some years back. Currently, 80% of oil palm production in Nigeria comes from dispersed smallholders that use manual processing techniques especially in the rural area. Hence, the economic contributions of oil palm to the sustainable agricultural productivity in Nigeria are high especially through the youth sector of its producing area (Ricardo, 2013).

Studies have shown that the tree crop (Oil palm) has been a source of oil (palm oil and palm kernel oil), source of timber, palm wine, broom, palm kernel cake, fuel and basket among others. Hence, Oil Palm has been a great source of income and employment to the farmers and processors in rural communities of Africa countries and Nigeria in particular as the enterprise is lucrative, capable of alleviating poverty and brings about rural development (Sarku, 2016; Okolo, Solomon and Igene, 2015 and Jamilu, Abdul-Aziz, Jafaru, Sani and Abudu, 2014). The employment it generates even for the youth ranges from basket weavers, broom makers, palm plank dealer, palm wine tapper and seller, palm bunch thresher, palm kernel oil processors, palm oil processors among others. Meanwhile, the palm oil industry is one of the key economic drivers of the agricultural sector in developing countries especially in Nigeria.

Palm Oil has gainfully engaged rural women, men and youth for a livelihood especially its processing as this has been the major product processed from oil palm fruit in Nigeria (Nwankwo, 2016 Eric and Ikhelola, 2007). Palm oil (popularly called red oil) is an essential content of almost every meal in virtually every home with high nutritional values. It is expected that the availability of such enterprise will attract youths, especially in the rural communities, as it generates income and improves standard of living among others. Akin to this is the availability of markets, in both rural and urban areas for palm oil and other products; being an essential raw material for households and industries (Sarku, 2016). The benefits of the enterprise are expected to prevent youth's migration to urban centres in search of 'greener pastures' that may never be. Consequently, the processing of Oil palm to palm oil minimises post-harvest losses, improves digestibility and palatability of the product, facilitates its handling, cooking and storage, adds value to the products, encourages technical and marketing skills in villages, create employment especially among the rural youth (Ohimain, Emeti, Izah and Eretinghe, 2014).

Youth formed a very significant proportion in Nigeria's population especially in rural communities for which their existence and potentials are well known for their contributions to the development of their local communities, especially those with sound physical and mental health (Ekong, 2003; Odebode, 2000 and Akinbode, 1991). However, youth in agriculture has been described as a constituent potent of agricultural development through agrarian reform for promotion of agricultural sector of the economy (Gwanya, 2008 and Jibowo, 2005). They do provide opportunities for generating the farming entrepreneurs and other rural professions. In addition, rural youth enjoy certain life experiences, which can be considered advantageous. These include a greater frequency of interaction with family, and hence less emotional problems. They also enjoy earlier and greater involvement in work roles with opportunity of becoming economically independent earlier than their urban counterparts (Akinbode, 1991 and Eremie, 2002).

Going by the above, the youth in rural communities may have strong desire toward agricultural activities especially oil palm production as it can fulfil the economic and social aspiration of rural youths (Adedoyin, 2005; Adewale, Oladejo and Ogunniyi, 2005). The development of the agricultural sector of the Nigeria's economy therefore depends on involvement of young people, more especially the rural youths. It is therefore pertinent to seek to posit that youth's involvement in oil palm processing will not only boost the much needed narrowed gap of demand and supply of oil palm in the Nigerian markets, improve the socioeconomic life of the rural people; but will also encourage development of vocational agriculture among the rural youths especially with the availability of the needed support services.

Although, there have been few studies on youth involvements in food crop production and processing (Ekong, 2003), many of these studies are without specific age group in focus. Also, several studies have revealed a generally low representation of youths in agriculture and rural development related issues; however, many of such studies focused on arable crop production activities and rural development issues (Ayinde, Torimiro and Koledoye, 2014; Agumagu, Njoku and Ukpongson, 2010). Despite the youth involvement in the processing of oil palm in the rural communities, yet, a dearth of knowledge exists on the assessment of the benefits accrued to the youth that are involved in oil palm processing in order to project the brighter future and to enhance the sustainability of the enterprise in rural community. Hence, there is need to ascertain the benefits derived by rural youths' involvement in oil palm business in Ido local government area of Oyo state, Nigeria along the processing chain of oil palm. To this end, the study determined the socioeconomic characteristics of the respondents, level of their involvement in oil palm processing, the important support services needed to improve their involvements in the enterprises and the specific benefits derived by the youths from their involvements in oil palm enterprises in the study area.

It was hypothesised that no significant relationship existed between the socioeconomic characteristics and youth's involvement in oil palm processing and there is no significant relationship between the benefits derived and the youths' involvements in oil palm processing.

METHODOLOGY

The study was carried out in Ido Local Government area, of Oyo State, Nigeria. Multistage sampling procedure was used to select the respondents for the study. The first stage involved the random selection of 25% of the 12 wards in the study area; Omi Adio, Ayobo and Abidogun were selected. The second stage involved purposive selection of 50 % of the eight (8) settlements in each of the selected wards where palm oil is being predominantly processed. This gave a total of 12 settlements in all with 4 settlements selected from each ward. The third stage involved the random sampling of 10 active youth Palm oil processors from the list of palm oil processors association in each of the communities; hence having 120 respondents for the study. Data was collected using structured questionnaire and also interview schedule to circumvent illiteracy constraints.

RESULTS AND DISCUSSION

Socioeconomic characteristics of the respondents

The result in Table 1 shows that close to four-fifth of the respondents were female (79.2%), while a little below two third were married (63.3%); indicating that oil palm processing was dominated by married female. The higher percentage of females implies that their involvement in oil palm processing is higher than that of their male counterpart. This might be due to the more feminine based stages involved in the traditional processing of the oil palm in the study area. This is in agreement with the assertions of Nwanko, (2016) and Ricardo (2013) that palm oil processing is mostly carried out by women. Meanwhile results on respondents' marital status is in line with assertion of Ajayi, Akande, Odejide and Idowu (2010) that rural dwellers respect the marriage institution and considers it as an essential

engagement as being married further implies a brighter future for the business as they resides in the study area and hence be committed to the business than the unmarried.

The findings in Table 1 further show that the mean age and years of formal education of the respondents were 26.6 ±5.5 and 2.1±0.7 years, respectively. The mean age implies that the processors were mostly youth; being young is a good omen for the continuity of oil palm processing enterprise in the study area. However, the respondents mean age of this study is not in agreement with the findings of Ohiman *et al,* (2014) in similar studies; in whose study was dominated by respondents with age range of 31-40 years. Furthermore, the respondents' mean year of formal education indicates that the respondents were not all that literate since traditional oil palm processing is more of psychomotor domain than cognitive domain. However, this trend of the education attainment is in contrast with the findings of Enwelu *et al*, (2016) and Jamilu *et al,* (2014), who found the mean year of formal education of oil palm processors to be 6 years. This implies that higher level of education is not a prerequisite for the processing of oil palm as the higher years of former education does not correlate with traditional processing techniques of oil palm; however, low education of the respondents may hinder adoption and use of modern processing technologies. The respondents' mean family size of 5 persons per household is supported by the research findings of Enwelu *et.al,* (2016) which reported the existence of relatively small household sizes in rural areas; on the other hand the result was in contrast with the findings of Nwankwo, (2016) in the similar studies that discovered the family size of 8.

The result in Table 1 further reveals the respondents' estimated mean monthly income of N15, 154.17, is closely related to the findings of Ohiman *et al,* (2014) that established the monthly net return of the palm oil processing business to be N14, 000 but disagrees with the Enwelu *et al*, (2016) who found the mean monthly income of N 30, 967 in similar study which invariably doubled the mean income of this study. Nevertheless, the result of this study negates the opinion of Ricardo (2013) that the gross income earnings in oil palm production are reasonable enough to encourage women's participation in the business. However, the low income level recorded by this study may be as a result of the seasonality of oil palm processing in the study area; as the respondents may likely diversify their livelihood for survival especially during the off season of the processing period as asserted by Yekinni, Adeniyi and Adebisi, (2017).

Table 1: Distribution of respondents by their socioeconomic characteristics

Variable	Frequency	Percentage (%)	Mean
Sex			
Male	25	20.8	
Female	95	79.2	
Age (years)			
16-25	46	38.4	26.6±5.5
26-30	74	61.1	
Marital status			
Single	43	35.8	
Married	76	63.3	
Divorced	1	0.8	
Educational status			
No formal education	21	17.5	2.1±0.67
Primary	66	55	
Secondary	33	27.5	
Estimated monthly income (₦)			
≤ 10,000	38	31.6	15, 154.17±6505.26
10,001 - 20,000	67	55.8	
21,001 - 30,000	15	12.3	
Household size			
0-5	57	47.5	6
6-10	58	48.8	
11 and above	5	4.2	

Source: Field survey, 2015

Support services needed in oil palm processing

The results according to the weighted scores in Table 2 show that improved technology (200.0) was ranked first among other support services

needed in oil palm processing. This is followed by credit facilities (199.2) and training services (199.2), while the least support services needed identified was the labour (150.8). This implies that the level of the respondents' involvement could be greatly enhanced by improved technologies, credit facilities and training services among others. However, labour will be least contributing factor to the respondents involvement in the oil palm processing business which may be due to the use of self and family labour that are prominent labour sources in rural area. However, the result in Table 3 further reveals that more than half (52.2%) of the oil palm processor fell into the low level of support services availability, which implies that the respondents need more support services in oil palm processing in the area.

Table 2: Distribution of respondents by support services needed in oil palm processing

Support services	Important	Not important	No need at all	Weighted score	Rank
Access to improved technology	100	0.0	0.0	200.0	1st
Access to credit facilities	99.2	0.8	0.0	199.2	2nd
Training services	99.2	0.8	0.0	199.2	2rd
Extension services	98.3	1.7	0.0	198.3	4th
Improved processing technologies	98.3	0.8	0.8	197.4	5th
Youth group formation	95.8	4.2	0.0	195.8	6th
Improved market	95	3.3	1.7	193.3	7th
Packaging strategies	93.3	6.7	0.0	193.3	8th
Food safety measures	92.5	7.5	0.0	192.5	9th
Storage facilities	91.7	8.3	0.0	191.7	10th
Labour	60	30.8	9.2	150.8	11th

Source: Field survey, 2015

Table 3: Categorisation of respondents by level of support services needed in oil palm processing

Category	Frequency	Percentage
Low	63	52.5
High	57	47.5
Total	120	100.0

Source: Field survey, 2015

Respondents' level of involvement in oil palm processing

Information on Table 4 shows the level of respondent's involvement by their weighted scores. Crushing, digestion and heating of the fruit (195.9) were ranked first among other activities in oil palm processing. This is followed by separation of endocarp from the kernel (192.4), while kernel drying and packing (189.9) was ranked third. However, the least activities that the respondents were involved was steam sterilization of bunches (184.2). Meanwhile, Table 4 further reveals that more than three-quarter (79.3%) of the respondents fell into high involvement in palm oil processing which is higher than the finding of Aphunu and Akpobasa, (2010) who found 60.86% youth involvement in palm oil processing. The inference is that the youths might have perceived a brighter future for the oil palm sector of the country which now necessitates their high involvement since past studies had established the lucrative and profitability nature of oil palm enterprise for poverty alleviation in the rural communities (Enwelu, Onyekwo, Nwaalieji, Dimelu, 2016 and Ohiman *et al*, 2012).

Furthermore, the respondents considered crushing, digestion and heating of the fruit as the basic activities that are necessary to be carried out by the oil palm processors, while steam sterilisation could be an optional activity. The findings tend to agree with the findings of Ricardo (2013) who reported active involvement of the youth in agricultural activities due to their zeal, strength, and innovativeness.

Table 4. Distribution of the respondents by level of involvement in oil palm processing

Oil palm processing activities	Not at all	Occasionally	Always	Weighted score	Rank
Crushing, digestion, and heating of the fruit	0.8	2.5	96.7	195.9	1st
Separating the endocarp from the kernel	0.8	5.8	93.3	192.4	2nd
Kernel drying and packing	3.3	3.3	93.3	189.9	3rd

Oil palm processing activities	Not at all	Occasionally	Always	Weighted score	Rank
Oil extraction from macerated fruit (by hand, hydraulic or other machine pressing)	0.8	10	89.2	188.4	4th
Separating fibre from the endocarp	2.5	6.7	90.8	188.3	5th
Stripping fruit from bunches	4.2	5.0	90.8	186.6	6th
Drying, grading, and cracking of the endocarp	4.2	5.8	90	185.8	7th
Palm oil clarification`	3.3	8.3	88.3	184.9	8th
Steam sterilization of bunches	5.0	5.8	89.2	184.2	9th

Source: Field survey (2015)

Table 5: Categorisation of respondents by level of involvement in oil palm processing

Category	Frequency	Percentage
Low	26	21.7
High	94	79.3
Total	120	100.0

Source: Field survey (2015)

Benefits derived from oil palm processing

The most benefit derived from oil palm processing by the respondents by weighted score as indicated on Table 6a was the supplying of raw materials to industries (215.9), this was closely followed by engaging the youths to prevent restiveness (214.2), while increase in standard of living (209.8) was the third benefit derived. Benefits like risk spreading and sharing (187.6) and source of recreation (174.7) were the less beneficial to the respondents in the study area. The result of this study is in consonance with the findings of Adebo, Ayodele, Olowookere, (2015) and Adesiji, Komolafe, Kayode and Paul, (2016) who asserts that palm oil processing enhances income and standard of living of the respondents. This implies that the benefits derived from the oil palm enterprise by the youth are good enough to attract, sustain and retain about one-third (30%) of the respondents who derived a high benefits from oil palm processing (Table 6b). However, the low level of the benefit derived may be attributed to the seasonality of oil palm production; as the income received therein may not be able to sustain them all year round; for instance the mean income of the respondents was ₦15,000.

Table 6a: Distribution of respondents by benefits derived from oil palm processing activities

Benefits	High	Moderate	Low	Not at all	Weighted score	Rank
A means of supplying raw materials to industries	20.0	76.7	2.5	0.8	215.9	1st
A means of engaging youths to prevent restiveness	20.0	75.0	4.2	0.0	214.2	2nd
Increased standard of living	15.8	78.3	5.8	0.0	209.8	3rd
Increased job opportunities	15.0	79.2	5.8	0.0	209.2	4th
Financial independence	19.2	70.8	9.2	0.8	208.4	5th
Improved livelihood ability	14.2	79.2	6.7	0.0	207.7	6th
Guaranteed income source	21.7	64.2	14.2	0.0	207.7	7th
Improved household nutritional and food security	11.7	77.5	10.8	0.0	200.9	8th
It serves as source of employment	15	71.7	11.7	1.7	200.1	9th
Material possession	10.8	77.5	11.7	0.0	199.1	10th
Provision of alternative local energy source	12.5	74.2	12.5	0.8	198.4	11th
Enhanced recognition	17.5	58.3	21.7	2.5	190.8	12th
A means of risk spreading and sharing	4.2	82.5	10	3.3	187.6	13th
It serves as source of recreation	18.3	52.2	15.8	13.3	174.7	14th

Source: Field survey, 2015

Table 6b: Categorisation of respondents by level of benefit derived in oil palm processing

Category	Frequency	Percentage
Low	84	70

High	36	30
Total	120	100.0

Source: Field survey, 2015

Relationship between respondents' socioeconomic characteristics and involvement in oil palm processing

This hypothesis sought to test for the significant relationship between the socioeconomic characteristics and the respondents' involvement in oil palm processing. Findings on Table 7a reveal that respondents sex (χ^2 =12.902; p=0.000) and marital status (χ^2 = 8.938; p=0.011) were significant to involvement in oil palm processing. This indicates that sex and marital status have a positive influence on the level of involvement of the respondents in oil palm processing. This implies that there is a gender role for sustainable palm oil production and that the marital experience or status has a positive influence in the processing of oil palm. This is in consonance with the assertions of Sarku (2016) and Enwelu *et al.* (2016). However, land tenure systems (Self owned [χ^2 =0.189; p=0.664] and Rented [χ^2 =0.459; p=0.498]) and membership of association (χ^2 =0.573, p=0.449) had no significant relationship with their involvement in the enterprise.

Table 7b further shows that youths' involvement in oil palm processing activities was significantly influenced by age (r= 0.277; p=0.002), educational status r= -0.242; p=0.008) and years of experience (r= 0.202; p=0.027). This further implies that the older the respondents the lesser the involvement in oil palm processing activities. This is due to the tasking nature of the enterprise as the activities involved manual production of palm oil are drudgery. Added to this is the significance of educational status that has an inverse relationship with the involvement in the oil palm processing which further implies that the less literate the respondents are, the more involved they will be in oil palm processing, while the year of experience is proportional to the respondents involvement in oil palm processing. The significance of age to involvement in palm oil enterprise as established by the findings of this research is in tandem with that of Nwanko (2016), but contrasts with what his studies upholds for education and years of experience in a similar studies.

Table 7a. Chi-square showing the relationship between socioeconomic characteristics of the respondents and their involvement (n=120)

Variables	χ^2	Df	p-value
Sex	12.902	1	0.000
Religion	1.098	2	0.578
Marital status	8.938	2	0.011
Tenure right ownership			
Self owned	0.189	1	0.664
Rented	0.459	1	0.498
Membership in association	0.573	1	0.449

7b: PPMC showing the relationship between the selected socio-economic characteristics of the respondents and their involvement

Variables	r-value	p-value
Age	0.277	0.002
Educational status	-0.242	0.008
Estimated monthly income	0.080	0.388
Household size	0.067	0.464
Years of experience	0.202	0.027

Correlation between the benefits derived and youths' involvements in oil palm processing

The PPMC result in Table 8 shows that significant relationship existed between benefits derived and involvements of the respondents in oil palm enterprises (r= 0.389; p=0.000). This implies that the more the benefits derived by the respondents, the higher their involvements in oil palm processing will be and vice versa. This is in agreement with the findings of Ohimain *et al*, (2014) that highlighted the significant benefits accrue to the youth processor in the enterprise for their economic and social development.

Table 8: Correlation analysis between the benefits derived and their level of involvement

Variables	r-value	p-value
Benefits	0.389	0.000

Source: Field survey (2015)

CONCLUSION AND RECOMMENDATION

Based on the findings of this study, it was concluded that the respondents were female, married and predominantly youth processors. It was also concluded that the support services needed by the respondent include improved technology, credit facilities, training services and extension services. The respondents had low level of support services hence need more support services in the study area. Also, respondents had high involvement in crushing, digestion, and heating of the fruit; separation of endocarp from the kernel, and kernel drying and packing. Benefits derived by oil palm processors include supplying of raw materials to industries, engagement of youths to prevent restiveness and increased standard of living; nevertheless the respondents derived low level benefit. Significant relationship existed between respondents' sex, marital status, age, educational status, years of experience, benefit derived and their involvementin palm oil processing.

Hence, the study recommends that adult education should be embraced by the respondents in the study area in order to explore the support services that will enhance their involvement in oil palm processing so as to have higher benefits from the enterprise. Consequently, processors should form cooperative groups to pull their resources together in order to have access to improved technology which was their highest needed support services identified in the study.

REFERENCES

Adebo G.M..; Ayodele, O.J. and Olowookere. K. (2015). Palm oil production as poverty alleviation strategies among small scale farmers in Ekiti State Nigeria. *World journal of Agricultural research* 2015; 3 (2) PP. 43-48. Doi: 10.12691/wjar-3-2-1

Adedoyin, S. F. (2005). Youth and Children Programme in Nigeria in Agricultural Extension in Nigeria. pp 251

Adesiji, G.B., Komolafe, S.E., Kayode, A.O. and paul. A.B.(2016). Socioeconomic Benefits of Oil Palm value Chain Enterprises in rural area of Kogi state Nigeria. *Journal of Production Agriculture and Technology*. June, 2016; 12 (1): 36-47 ISSN: 0794

Adesope, O. M. (1999). Evaluation of Youth Participation in Community Development Projects in River State. Nigeria. Unpublished MSc Thesis, Department of Agricultural Economics and Extension, Federal University of Technology (FUTO), Owerri.

Adewale, J. G., Oladejo, J. A. and Ogunniyi, L. T. (2005). Economic Contribution of Farm Children to Agricultural Production in Nigeria: A case study of Ekiti State *J. Soc. Sci.* 10(2): 149 – 152

Ajayi, F. T., Akande, S. R., Odejide, J. O. and Idowu, B. (2010). Nutritive evaluation of some tropical under – utilized grain legume seeds for ruminants nutrition. *Journal of Animal Science,* vol6, No.7 pp1 -7.

Akinbode, I. A. (1991). Integrating Rural Youth into the Development Process. A Challenge to Nigeria. In: Proceedings of the National Workshop on Income Generating Activities for Rural Youth. National Agricultural Extension and Research Liason Services, Ahmadu Bello University, Zaria. July 8th – 12th

Aphunu and Akpobasa, 2010. Assessment of Rural Youths' Attitude towards Agricultural Production in Sapele Local Government Area of Delta State. *The Nigerian Academic Forum* Volume 19 No. 1 November, 2010. pp 1-4.

Ayinde, J. O., Torimiro, D. O. and Koledoye, G. F. (2014). Youth Migration and Agricultural Production: Analysis of Farming Communities of Osun State, Nigeria. Department of Agricultural Extension and Rural Development, Obafemi Awolowo University, Ile Ife, Nigeria. .In: *Journal of Agricultural Extension* Vol 18. (1) June 2014.

Ekong E. E. (2003). *An Introduction to Rural Sociology.* Dove educational Publishers, Uyo, Nigeria.

Enwelu, I. A, Onyekwo, D.U, Nwaalieji, H.I, Dimelu, M.U. (2016). Gender role in Sustainable Palm Oil production in Selected communities of Imo State, *Nigeria.Journal of Agricultural Extension* Vol 20 (2) 2016. ISSN(e): 24086851, ISSN (Pint) 1119944X http://dx.doi.org/10.4314/jae.u2012.18.

Eremie, S. (2002). Youth; a strong Hold for sustainable Agricultural Extension Delivery and Development. Proceedings of the 8th Annual National Conference of Agricultural Extension Society of Nigeria held at Benin City, September 17th – 19th

Eric, G. O. and Ikheloha, E. E. (2007). Analysis of the structure and performance of palm oil marketing in Edo State Nigeria. Global Approaches to Extension practice (GAEP), 3(1): 61-67.

Gwanya T. (2008). Address by the Director-General at the Launch of Youth in Agriculture and Rural Development (Yard) On 20-22 June 2008, Goudini Spa, Western Cape Department of Land Affairs, Republic of South Africa retrieved on 1stAugust,2008athttp//www.land.pwv.gov.za/.../Publications/2008/Speech%20of%20DG%20at%20YARD%20Launch%20Goudini%20Spa.pdf

Jamilu, A. A., Abdul-Aziz, H., Jafaru, A. K., Sani. B. M. and Abudu, S. (2014). Factors influencing the adoption of Sasakawa Global 2000 maize production technologies among small holders farmers in Kaduna State. *Journal of Agricultural Extension* 18 (1): 73-83.

Nwankwo, E. C. (2016).Women in palm oil processing in South-East Nigeriachallenges and prospects in a dwindling economy. *Journal of Development and Agricultural Economics.* Vol. 8(11), pp. 251-259, November, 2016 DOI: 10.5897/JDAE2016-0744 Article Number: B07A54861516 ISSN 2006-9774 http://www.academicjournals.org/JDAE

Odebode, S. O. (2000). Youth Participation in Rural Development: A Case Study of Selected Youth Programme in Lagelu Local Government Area of Oyo State. In Sustainable Children-in-Agriculture programme in Nigeria,CIP 2000-Enugu Book of proceedings .254-259.pp.

Ohimain, E. I., Emeti, C. I., Izah S. C. and Eretinghe, D. A. (2014). Small-Scale Palm Oil Processing Business in Nigeria; A Feasibility Study. *Greener Journal of Business and Management Studies* ISSN: 2276-7827 ICV 2012: 6.03 Vol. 4 (3), pp. 070-082, July 2014.

Okolo, C. C., Solomon, S. and Igene, L. (2015). Analysis Of Women Participation in Oil Palm Processing in Dekina LGA of Kogi State, Nigeria. *Nigerian Journal of Agriculture, Food and Environment*. 11(2):157 -160

Ricardo. C. (2013). Oil Palm in Africa Past, Present and Future Scenarios. World Rainforest Movement series in tree plantation No.15 Pp. 1-78.

Saku, R. (2016) . Analysis of Gender roles in the Oil Palm Industry in Kkwaebiberem District, Ghana. *International Journal of Humanities and Social Science* Vol. 6. No. 3; March, 2016.

Yekinni, O. T., Adeniyi, R. T. and Adebisi, S. A (2017). Crop Farmers' Adaptation Strategies to Mitigate Conflicts with Nomads in Oyo State. *Nigerian Journal of Rural Sociology* Vol. 17, No. 1, 2017. Pp 19-28