CONTRIBUTIONS OF TRADE IN SHEA-BUTTER (*Vitellaria paradoxa*) PRODUCTS TO THE RURAL ECONOMY IN SAKI, OYO STATE, NIGERIA

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ABSTRACT

Involvement of rural people in forest-based activities can support private sector entrepreneurial development especially in communities that are endowed with forest resources. Shea butter (*Vitellaria paradoxa*) is a Non Timber Forest Resource (NTFP) of wide occurrence in Saki town, southwestern Nigeria. A survey was conducted to assess the involvement of residents' in shea butter business/enterprise and by extension its contributions to the study area economy. Four (4) categories of practitioners in shea butter business were identified viz: retailers (20.2%), processors (20.3%), gatherers (20.4%) and middlemen (39.3%). Women involvement in the business was over 70.0% in each of the categories. Again, respondents of various age classes are engaged in the business and mostly had little or no formal of education (over 50.0%). This is an indication that shea butter business in the area was based more on homegrown training. This has serious implications for product standards and by extension wider market acceptability. Profits derived from the business was in the range of **N**91,333 and **N**409,747 per annum, which acceptably can contribute meaningfully to household and national poverty reduction. Training of local populations especially processors in modern methods of resources improvement (raw materials), product value addition methods and marketing strategies will complement local and national economic development efforts particularly at the grassroots' level.

Keywords: Entrepreneurial development, Shea-butter enterprise, Homegrown training, Value-addition, Women dominance

INTRODUCTION

Small scale forest-based enterprises are fast becoming the main stay of an increasing number of people particularly those living in remote communities' majority of whom are suffering under the ravaging scourge of unemployment. The extent of dependence on forest products varies from one location to another. While forest products can justifiably be seen as an easily accessible means of livelihood in most marginal areas, it is a derived demand in some other areas (Aiyeloja and Popoola, 2005).

In most developing nations including Nigeria, conventional forestry practice tends to always focus on timber production and harvest. However, non-timber forest products (NTFPs), which describes a wide range of species both flora and fauna and are produced within the forest or woodland are equally available to man for several uses apart from commercial timber. Popoola and Oluwalana (1998) reported that there may be over 6,000 NTFPs in Nigeria. Production of NTFPs in combination with conventional timber can provide significant beneficial returns as well as make forest extraction not only economically viable but more environmentally sustainable. About US$26,000 was realized as income from the sale of NTFPs from the Yapo National Forest in Southern *Cote d'**Ivoire*** in 1987, which saved that country huge expenses (Falconer, 1990). Also, World Bank (1991) reported that NTFPs accounted for about 20% forest revenues and over 70% net export earnings in India.

Some NTFPs, including shea butter (*Vitellaria paradoxa*), constitute major rural industrial raw materials such as in the cottage and gin distilling industries. The realization that their contributions to the nation's economy may be as important as that of timber (Kamanga, *et. al.*, 2009) has provided a new impetus for evaluating the role(s), which NTFPs play in the economy of rural people. Some edible NTFPs are not only critical in supplementing the nutritional value of basic staple foods in lipids, protein and micro-elements but they also diversify diets and improve balance in local food supply given their ready availability at different seasons of the year (Popoola and Maishanu, 1995; Heubach, *et. al.*, 2013). NTFPs are beginning to command growing market potentials both locally and internationally in some cases. Al-Amin (2005) also reported that farmers in the Sudano-Sahelian savannah zone of Nigeria have used *V. paradoxa* for afforestation purposes. Its leaves are not consumed by man but its fruits are well marketed by farmers while the seeds are of great economic importance. About 100kg of *V. paradoxa* fruits can give about 5kg of shea-butter with an oil content of 46-52%. Shea-butter is used as baking fat, margarine and is increasingly used in confectionery industry particularly as cocoa-butter substitute in chocolate production (Leakey, 1999).

The growing realization of the importance of NTFPs has brought about a gradual change in the focus of forest management in Nigeria (Popoola and Oluwalana, 1998). A vast number of edible and non-edible products are gathered from the forest mostly by forest-hedge people or a team of urban people for subsistence or for local and external market. Anukwa (2003) reported an increased attention on the potentials of NTFPs at meeting

rural communities' needs for food, fibre and forage as well as source of income. At the informal development front, apart from progressively reducing poverty, NTFPs have increased independence at both household and community levels (Ogle, 1996).

The ecology of Saki, in Oyo State (the study area) is tropical, which supports the growth and survival of tropical species including shea butter. The high survival and establishment rates of shea butter in the area make the species a common feature in most land uses in the area especially farmlands (Fatoba, 2002; Oni, 2013). Given the returns derived from engagement in the management and trade of shea butter products, individuals and households over time see the products of shea butter as an opportunistic livelihood option especially in face of global poverty, hunger and unemployment. This study was therefore directed at documenting *V. paradoxa* business in the study area with the view to determining contributions of trade in *V. paradoxa* products to the rural economy.

METHODOLOGY

Study areaThe study site was Saki (Fig. 1), a location along the Guinea savannah zone, Oyo State of Nigeria, cutting across latitudes 8° 40'N and longitude 3° 24'E (Wikipedia, 2012; Oyo State, 2012). Saki comprises two LGAs: Saki East and Saki West LGAs, which has a population of 388,225 and an average of four (4) persons per household (NPC, 2006). The area has a long history of trade in agriculture and forest produce including cashew nuts, shea nuts and resin among others. As commercial hub within the southwest region of Nigeria and its strategic geographical location, local as well as international trade linkage exist between residents in the area and foreign tradesmen and women.

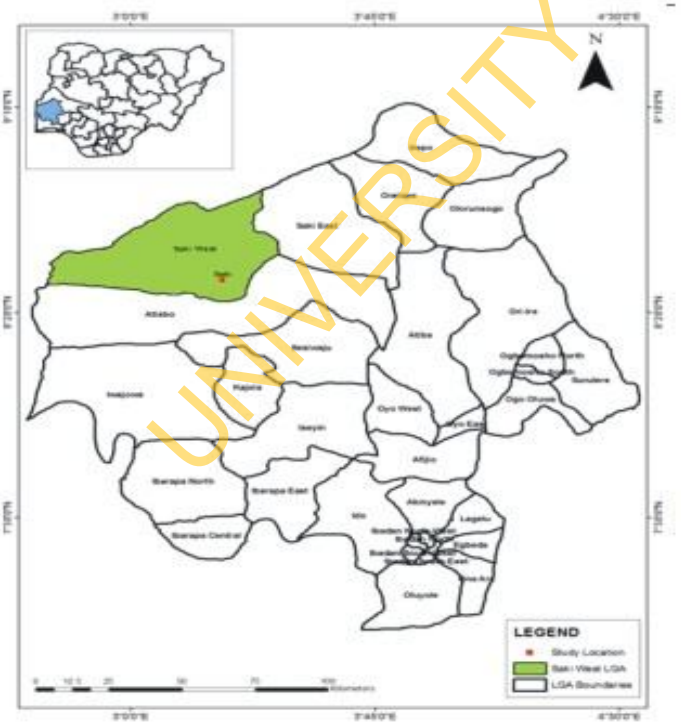

Fig. 1: Map of Oyo State, Nigeria Showing the Study Area

Method of data collection

The data for this study were obtained with the use of structured questionnaire. The questionnaire was designed to obtain information on demography of the responding households, their economic activities in relation to *V. paradoxa* and profitability. As a form of reconnaissance prior to administrationof questionnaire, the study utilized existing cultural groups in the area to reach target respondents (those engaged in *V. paradoxa* business).

Based on discretionary judgment of the research team, the respective forms of activity of the above target respondents in the business were tied to denote a given role/activity. For instance, collection of *V. paradoxa* leaves (i.e. those engaged in periodic checks within farmlands and similar areas for viable shea butter stands for exploitation of fruits, seeds, leaves or other parts) were denoted to represent gatherers. In effect, this represented a content analysis of the various responses supplied by respondents. Out of 160 set of questionnaires distributed to respondents across Saki East and Saki West LGAs, a total of 148 questionnaires were successfully retrieved. Descriptively statistic which include frequencies, percentages, charts and figures was used for data analyses. In addition, regression and correlation analyses were also used. The regression model was of the form:

$Y = bo + b1 + eij.$

The correlation coefficient (r) was determined with equation 1:

$$\text{Correlation coefficient (r)} = \frac{\sum xy - \sum x \sum y / n}{\sqrt{\sum x^2 - [\sum x]^2 / n \sum y^2 - [\sum x]^2 / n}} \quad \text{...Eq. 1}$$

Where:

x = the number of different category of respondents;

y = annual income from shea-butter product trade
N = sample size
bo & b1 = regression constants to be determined
eij = error term

RESULTS

Categories of practitioners in *V. paradoxa* business

Four (4) major groups of practitioners in shea butter business were evident across Saki community (Fig. 2). They are product gatherers, processors, middlemen and retailers/users.

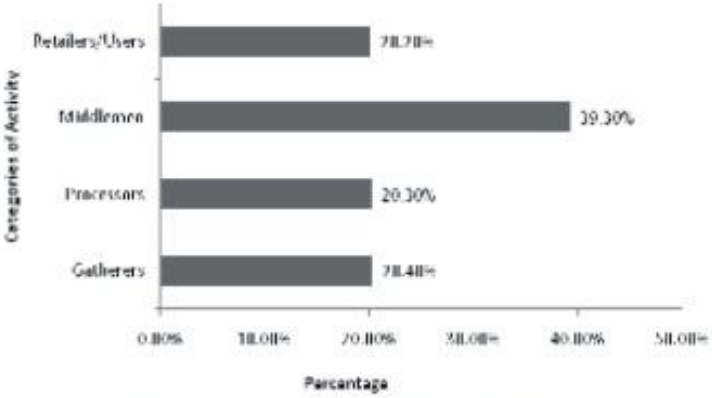

Fig. 2: Involvement/activities of respondents in shea butter business in Saki

The survey (Through focus group discussion, FGD) also revealed a dichotomous tribe distribution of the respondents involved in shea butter business in the study area. About 76.0% of the gatherers were "*Barba*" people while 23.3% of them were Yoruba; among the processors, 60.0% were "*Barba*" while 40% (12) were Yoruba; all (100.0%) the middlemen were Yoruba and; 60.0% of the retailer/users were "*Barba*" and 40.0% were Yoruba. Furthermore, 96.67% of the processors had *V. paradoxa* stands on their farmlands and 93.33% of the gatherers also had (Table 1). The tree stands were perceived to serve as shade to both the farmers and their tender arable crops apart from being their source of shea butter nuts. The nuts are picked under shea trees on forest lands. The remaining processors and gatherers had no shea tree on their farmlands, so they only picked the nuts around from forest lands. None of the middlemen and the retailer/users had the tree on their farms.

Demographic Background of Respondents

Table 1: Demographic Characteristics of Respondents in Shea butter Activities

Demographic variables	Gatherers	Processors	Middlemen	Retailers/ Users	Mode
Gender					
Male	8(26.7)	0(0.0)	17(29.3)	7(23.3)	
Female	22(73.3)	30(100.0)	41(70.7)	23(76.7)	Female
Age (Years)					
<30	5(16.7)	4(13.3)	3(5.2)	4(13.3)	
- - -	11(36.7)	15(50.0)	27(46.6)	4(13.3)	
>45 – 65	10(33.3)	11(36.7)	25(43.1)	8(26.7)	30 - 45
>65	4(13.3)	-	3(5.2)	14(46.7)	
Family Size					
1- 6	4(13.33)	7(23.33)	10(17.24)	7(23.33)	
7 – 12	26(86.67)	23(76.67)	48(82.76)	23(76.67)	7 – 12
Marital Status					
Single	0 (0.0)	0 (0.0)	0(0.0)	0(0.0)	
Married	28(93.33)	30(100.0)	56(96.55)	26(86.67)	Married
Widowed	2(6.67)	0(0.0)	2(3.45)	4(13.33)	

Values in parentheses are percentages for each group/category of business practitioner

The study (Table 1) observed shea butter business as being more prominent among respondents with age bracket of 30 and 45 years, married people and the female gender as well as families of between seven and twelve individuals. Also, gender disparity in *V. paradoxa* business is more pronounced among processors (Table 1). Although, it can be stated that men mostly plant and own trees and shrubs in African traditional context and practice, Table 1 showed the utilitarian roles of women reflected in forms of different activities towards harnessing available resources (gathering, processing, middlemanship roles etc) within their immediate environment to improve livelihood. However, except for among retailers/users where frequencies of participation/engagement in the business increased with age, even up to >65years, other categories of practitioners showed most active involvement within 31 45 and 45 65 age brackets.

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Table 2: Socio-economic Characteristics of Respondents in Shea butter Activities

Socio-economic Variables	Gatherers	Processors	Middlemen	Retailers/Users	Mode
Educational Status					
None	23 (76.67)	19 (63.34)	29 (50.00)	22 (73.34)	
Adult education	1 (3.33)	0 (0.00)	0 (0.00)	1 (3.33)	
Primary	2 (6.67)	10 (33.33)	24 (41.38)	2 (6.67)	
Secondary	1 (3.33)	1 (3.33)	0 (0.00)	1 (3.33)	None
Modern	3 (10.00)	0 (0.00)	5 (8.62)	0 (0.00)	
N.C.E/N.D	0 (0.00)	0 (0.00)	0 (0.00)	4 (13.33)	
Primary Occupation					
Farming	30 (100.00)	30 (100.00)	0 (0.00)	4 (13.33)	Farming
Trading	0(0.00)	0 (0.00)	58 (100.00)	3 (10.00)	
Civil service	0 (0.00)	0 (0.00)	0 (0.00)	17 (56.67)	
Handicraft	0 (0.00)	0 (0.00)	0 (0.00)	2 (6.67)	
None	0 (0.00)	0 (0.00)	0 (0.00)	4 (13.33)	
Secondary Occupation					
Farming	0 (0.00)	0 (0.00)	0 (0.00)	2 (6.67)	None
Trading	2 (6.67)	0 (0.00)	0 (0.00)	0 (0.00)	
Transportation	1 (3.33)	0 (0.00)	0 (0.00)	0 (0.00)	
None	27 (90.00)	30 (100.00)	58 (100.00)	28 (93.33)	
Farm size (ha)					
..	4 (13.33)	4 (13.33)	0 (0.00)	0 (0.00)	None
>2 – 3	13 (43.33)	10 (33.33)	0 (0.00)	0 (0.00)	
>3 – 4	9 (30.00)	13 (43.33)	0 (0.00)	0 (0.00)	
>4 - 5	4 (13.33)	2 (6.67)	0 (0.00	0 (0.00)	
None	0 (0.00)	1 (3.33)	58 (100.00)	30 (100.00)	

In summary, shea butter business in Saki Town is dominated by illiterates whose primary occupation is farming (Table 2). It will also appear as if most respondents have no other occupation and no farm land. However, this is not so. It appears so because none of the middlemen and retailers/users has any farm land of their own while only 6.7% of the retailers/users have other occupation, which is farming (Table 2).

Plate 1: Women extracting shea-fat

Educationally, at least, 50.0% of respondents had no form of education. This was particularly so among gatherers (76.7%) followed by retailers/users (73.3%).

Use of Shea butter

All shea-butter processors and retailer made use of it as oil for cooking soup and stew as well as for eating yam, for lightening, and as body cream. They also used it as medicinal condiments to treat cold, cattarh and rheumatism in old ones in addition to using it as baby oil. Eighty percent (80.00%) of the processors used less than one kilogram of the shea-butter in a week while the remaining 20.00% used up to two kilograms in one week. About 80.0% of the retailer were using less than one kilogram per week and 16.67% used up to two kilograms per week.

Profitability of shea butter business

Focus group discussions (FGDs) reveal that the *Barbas*, in the study area sold the nuts at N28,000 per ton (N30 per kg) during the rainy season when the nuts were more in abundance. This increased up to N40,000 per ton (N40 per kg) during the dry season when the trees were no more fruiting (FGD).

Table 3: Frequency Distribution of the Collection Rate of Shea-butter in the Study Area

Number of Collector	Percentage (%)	Rate (tonnes/annum)
4	13.33	<1
3	10	1
0	0	2
0	0	3
3	10	4
6	20	5
7	23.33	6
0	0	7
2	6.67	8
0	0	9
5	16.67	10

Most of the gatherers (86.67%) sold to produce-buyer and these were those that gathered the seeds largely between 1-10 tons/yr on the average. The highest proportion (23.3%) of the gatherers was those that sold about 6 tons of shea butter fruits annually. This is followed by those who are collecting 5 tons (20.0%). Ten percent of these gatherers claimed to be collecting about 1 ton and 4 tons of the fruits annually. In addition, 16.7% were collecting about 10 tons, 6.7% about 8 tons while the remaining 13.3% sold less than a ton directly to processors (Table 3). The low level of average yearly production of shea-butter applied to all levels of production. Some of the processors processed only what they personally gathered (93.33%), while others (6.7%) bought more to what they collected. In all, the processors were only able to gather between 100kg and 400kg of the shea-nuts per annum and on the average, 100kg (13.3%), 200kg (46.7%), 300kg (16.7%) and 400kg (23.3%).

Table 4: Ranges of Income Generated from Shea-butter Activities

Annual income (₦)	Gatherers	Processors	Middlemen	Retailers/ Users
<50,000	2(6.67)	-	3(5.2)	3(10.0)
50,000-100,000	7(23.3)	14(46.7)	5(8.6)	18(60.0)
>100,000-150,000	8(26.7)	16(53.3)	25(43.1)	5(16.7)
>150,000-200,000	13(43.3)	-	21(36.2)	4(13.3)
>200,000	-	-	4(6.9)	-
Average Annual Income (AAI)	112,667	91,333	122,414	409,747

Values in parentheses are percentages for each group/category of business practitioner

Average annual income (AAI) obtained from shea butter business ranged from about N91,000 to about N409,747 (Table 4). Shea butter gatherers presented a group of respondents among others whose income generated from the business progressively increased from N50,000 up to N200,000. Meanwhile, this category represents the lowest educational group (Table 2).

Table 5: Correlation Analyses of Shea-Butter Tree Availability on Residents Farm and Corresponding Annual Income from Shea-Butter Product Trade

Residents Category	x	Y	x^2	y^2	xy
Gatherers	28	112,667	784	12,693,852,000	3,154,676
Processors	25	91,333	625	8,341,716,889	2,283,325
Middlemen	0	122,414	0	14,985,187,000	0
Retailer/User	0	83,333	0	6,944,388,889	0
Total		**Σy = 409,747**	**Σx^2 = 1,409**	**Σy^2 = 42,965,147,000**	**Σxy = 5,438,001**

Applying Eq. 1 to the data in Table 5, the Correlation Coefficient (r) therefore is 0.11 while the Coefficient of Determination (r^2) is 11%.

Thus, no correlation was established between availability of shea-butter trees on respondents' farm and the income generated from shea-butter product trade in the study area. This invariably implies that those engaged in shea-butter product business in Shaki does not necessarily have shea-butter trees on their farm.

Table 6: Summary of Average Annual Income, Family Size and Per capita Income of Residents Involved in Shea-Butter Tree Products Trading

Variables	Gatherers	Processors	Middlemen	Retailers	Mean	Total
Average Annual Income (₦)	112,667	91,333	122,414	83,333	102,436.75	409,747
Average Family Size	9	9	9	7	8.5	34
Average Per Capita Income	12,319	10,148	13,602	11,904	11,993.25	47,973

From Table 6, middlemen in shea-butter trade made the highest annual income followed by gatherers and the processors. Retailers made the lowest income from the trade. However, the lowest per Capita income was made by the processors. Generally, trade in shea-butter in the study area generate a mean annual income of N102,436.75 for an average participant.

DISCUSSIONS

Practitioners in *V. paradoxa* business

Although shea-butter oil is not use all the time, its usage is considered expensive because it was scarce and the processing is labor-intensive. It's scarcity notwithstanding local processing of shea-nut is continuous. This may be because processors are used to variation in its yield or because it is not used all the time. Like many indigenous species, the yield of shea had been reported by Schmidt-Leplaideur (1987) as well as Agbahungba and Depommier (1989) to vary from year to year.

Majority of the practitioners in *V. paradoxa* trade were middlemen (39%) who served as links between local-based individuals and groups as well as the merchants that are involved in distant areas and locations. This category of people are usually more exposed in term of market trend and demand preferences, which gave them the edge over other categories of stakeholders in the trade. Also, that all middlemen in the business were Yoruba and not less than 60.0% of the other categories of respondent belong to the same tribe is not disturbing since the study area is dominated by the *Yorubas*. Dove (1993) reposed this submission when he reported majority of the income from NTFPs as accruing to local elites who control the market. Also, worthy of note is the dominance of women in the trade. Such unique roles of women had been observed by Clark (1994) and Gladwin *et al*. (2002) to be more pertinent across developing and underdeveloped societies within African communities. The finding also agreed with that of Schreckenberg (2004) from his report on the same species in Benin Republic, West Africa. This character of women engender in them the caretaking roles/assignments of tending and managing trees/shrubs and similar productive assets within their areas of residence or domicile.

The different age classes of respondents engaged in shea butter business from this study also confirmed that both young and old including middle-aged residents are involved while family size distribution showed that labour demands in the different activities of the trade can be optimally sourced within the households. Socio-economically, the likely implication of all these is that the various actors in *V. paradoxa* trade perhaps from childhood age receives homegrown training in the business. However, the low rate of formal education observed among respondents perceivably has serious consequence on access to modern and improved methods and techniques of *V. paradoxa* stand tending and management practices including processing, utilization and forest industries development in the area.

Forest based industries in Nigeria have perennially been comatose particularly those that can process NTFPs. The poor or low existence of small, medium or large forest industries in Nigerian forestry practice further limits desired contribution of the forestry sub-sector to national economic development. The result of this survey particularly the different categories of actors in the shea butter business and their modalities of operation should incite and attract local and even international forest industries into the area. This will grossly improve returns in value-chain process.

Profitability of shea butter business

The seasonal abundance of *V. paradoxa* nut is an indication of its major source, which is the wild in the study area. This is in agreement with a CIFOR (2004) study, which reported that most NTFPs originated from and are managed in the wild with implication for conservation of the mother tree from which shea-butter is gotten and the valuation of the product. By implication collectors of the nuts do so mostly from the available stands in the wild and may not care for harvest limit or sustainable collection of the nut, which may affect not only the tree but the ecology of the niche within which the tree exists. Even if collectors do so sustainably, the existing wild stocks will not exist forever, because the stock will be competing with other land uses (Laird, 1999; Cunningham, 2000) and with time benefit from trading in *V. paradoxa nut* may not match that from other other land uses such as farming.

Seasonal variation was also observed in the profitability of Shea butter business in the study area, which will not be unconnected with the availability of the nut. This may not be unconnected with the findings of Hyman (1991) who observed annual variation in product yield and attributed this to changes in the proportion of NTFPs collected. Middlemen made one form of returns or the other from the business. Apart from the cost of purchase, they usually collect a thousand naira

(N1,000.00) on each ton of the nuts, from the produce buyers. This implied that they benefitted both from the gatherers and the shea-nut merchants, which supported Dove (1993) observation on the category of stakeholder that benefitted more from NTFP trade.

Gathering of shea butter plant parts (seeds, fruits and others) involve high level of monitoring and familiarity with the biology and local climate particularly the periods of plant maturation, fruiting and harvest. The timing and duration of gathering of the plant parts and similar strategic considerations could therefore be salient factors that can increase profitability for this group of practitioners. Thus, apart from adoption of improved technology in shea butter business, knowledge of local environment can possibly influence proceeds (profitability) in the business. Shea butter processors made a minimum of N50,000 and a maximum of N150,000 per annum from the trade. Compared with what other categories of the respondents made from the business, this was the lowest. This may be why very few people are engaged in processing of shea butter in the study area and it deviates from Dove (1993) submission on the importance of value addition. He reported majority of the income from NTFPs as accruing to those who transform the product or local elites who control the market. There is therefore the need for value addition to *V. paradoxa* products and services, if it must contribute to the economy of the study area. Training of local shea butter processors on methods of improving product value as well as empowerment in form of access to fabricated machines, which can drive small scale processing in shea butter business are equally imperative.

The average income from shea-butter trade in the study area, though substantial, is not expected to enough to meet all the financial requirements of respondents' but it served as supplement: a view reposed by Anthon *et. al.* (2008) as well as Ngaga *et. al.* (2009) who viewed NTFPs as ecosystem services, which provide a source of complementary cash income for rural dwellers, most especially when agricultural yields are low. This notwithstanding, the feature of the various groups involved in *V. paradoxa* business in the study area is indicative of the poor capacity of local manpower and infrastructure needed for the development of this industry. Retailers of shea butter products made the lowest profit of about N83,333 per annum. Given the low processing capacity of the respondents, the spate of activity and the influence of middlemen in the trade, it is conceivable that secondary and finished products become articles of trade, use and market for retailers and users. If product development and standards for international markets are considered; all things being equal, the profit derivable by retailers in the *V. paradoxa* will likely improve household living standard in the study area. By extension, the minimum average income of N30,245 per year obtained by Babatunde (2008) across rural areas in Nigeria may at least be tripled over time. This is indicative of the potential role of forestry in reducing poverty and improving rural livelihood.

CONCLUSION

Resources endowment in a given area can be a useful instrument for development especially in the rural sector. Shea butter (*V. paradoxa*) is dominated by women of different age classes in the study area. Poor capacity of local people to enhance value addition in products' processing, utilization and marketing poses a major limitation in forestry development in Nigeria especially at the private sector level. Although, the returns obtained appear significant and has potential to improve household livelihood, forest industries development, education and improvement in market services in line with standards can make the shea butter business more attractive both to local practitioners and investors. Also worthy of note is the need to take perpetual availability of the species serious in formulating policies for its management given its socio-economic importance to the rural economy of the study area.

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