Abstracted by: EBSCOhost, Electronic Journals Service (EJS), Google Scholar, Journal Seek, Scientific Commons, Food and Agricultural Organization (FAO), CABI and Scopus

Journal of Agricultural Extension
Vol. 22 (2) June, 2018
ISSN(e): 24086851; ISSN(Print); 1119944X
http://journal.aesonnigeria.org
http://www.ajol.info/index.php/jae
Email: editorinchief@aesonnigeria.org

Women Involvement in Shea Butter Production in North Central States of Nigeria

https://dx.doi.org/10.4314/jae.v22i2.4

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Abstract

The study assessed women involvement in Shea butter processing activities in the north central states of Nigeria. The specific objectives included the examination of the socio-economic characteristics of the women involved in Shea butter production in Niger and Nassarawa states, ascertained their level of involvement and identified factors influencing their involvement in Shea butter production. To achieve these objectives data were collected from 197 respondents from Niger and Nassarawa states using questionnaire and interview schedule. Data collected were analysed using descriptive statistics (frequency distribution, mean), t-test and multiple regression. Results revealed that majority (89.6%) of the respondents had 11 years' experience in Shea butter production. They were married, illiterate, young with the average age of 36 years and average family size of 8. Many belonged to cooperatives (about 58%). Multiple regression results revealed that age (b=-0.084), household size (b = 0.091), production experience (b = 0.175), income (0.203) and membership of cooperatives (b = 1.845) had a significant influence on the women level of involvement in Shea butter production activities. Household size, production experience and income generation of the respondents were positively related to their level of participation since their coefficient are positive (i.e. b = 0.203; b = 0.175; b = 0.203 respectively). The study recommends among others that acquisition of formal education, large household size and membership to cooperative societies are necessary for enhanced production for higher income from Shea butter production for women.

Key Words: Women, Shea butter production, Nigeria

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Introduction

Shea tree activities in North Central States of Nigeria are sources of income to many people, especially women. However, the level of income received is generally low when compared with the potentials. This is attributable to several factors. First, the handling and processing methods adopted result in low quality of fruits and butter which fetch low prices and reduces access to international markets. This situation is worsened by lack of awareness of the collectors and processors of superior handling and processing methods and equipment. Even in cases where they are aware, the cost of such equipment is normally beyond what they can afford as individual operators. Secondly, most of the collectors and operators are in small, scattered and remote areas which make access to markets difficult resulting in low prices. Thirdly, they lack bargaining power as they operate mostly as individuals. This frequently places them at the mercy of middlemen who usually go into the rural areas to purchase the nuts and butter. The collectors and processors who are mostly women therefore do not reap the expected benefits and recognition for their labour. Suleiman (2008) observed that marketing the oil gave women better opportunities, primarily through improved income. However, over 70% of the fruits produced is usually not collected or collected but not evacuated for processing leading to enormous waste due to labour input and other factors. (Suleiman, 2008).
In the North Central States of Nigeria, women therefore in addition to their farm work, are involved in shea tree activities but with low economic returns. In order to transform these shea tree activities from a marginal economic activity into a veritable vehicle of poverty alleviation, there is the need to assess these activities of the women in the shea industry and identify the various factors that influence the women's involvement in the production in order create awareness on how to obtain higher quantity and quality of shea nuts and butter through better handling, processing and marketing procedures for higher economic returns.

Purpose of the study

The study assessed women involvement in shea butter production in the shea growing areas in the north central states of Nigeria. Specifically, the study:

1. examined the socio-characteristics of respondents;
2. ascertained their level of involvement; and
3. assessed factors affecting respondents' involvement in shea butter production

The following null hypothesis was tested for the study:
There is no significant relationship between socio-economic characteristics of shea butter producers and their participation in shea butter production activities

Methodology

The area of study is the North Central Zone of Nigeria. The zone is made up of six states namely Kogi, Benue, Niger, Kwara, Nassarawa, Plateau. The zone has a population of about 21.1 million and a land area of 235.110 km^2 within the Guinea Savannah region of Nigeria. The zone has seven months of rainfall in the year (April – October) with July and

August having the heaviest rainfall. This area has the largest concentration of shea trees in Nigeria (Okolo, Okolo and Enaberue*.,* 2009). Two States Niger and Nasarawa were purposively selected because of the high density of shea trees and high level of activities in shea butter production and trade in the states.

Niger State is the largest State in Nigeria with a total land area of 76,363 sq km. It has a population of about 3.9million. The state is endowed with great potential for agricultural production because of the availability of abundant arable land. Nasarawa State has total land area of 27,117sq km with a population of 2.1million. Nasarawa State has agriculture as the mainstay of its economy with the production of varieties of cash crops throughout the year.

There are three zones in Niger State Agricultural and Rural Development Project- Zone A (Niger South), Zone B (Niger Central), Zone C (Niger North). For administrative purposes, each zone is made up of 10 extension blocks. Each block has 8 extension circles with each extension circle having 8 extension sub-circles. From this structure, each zone is made up of 640 extension sub-circles and a total of 1920 extension sub-circles in the three zones of the entire State. There are also three zones in Nassarawa State Agricultural and Rural Development Project also namely Western zone, Eastern zone and Southern zone. Each zone is made up of 10 extension blocks, each block has 8 extension circles, while the extension circle has 8 extension sub-circles and a total 1920 extension sub-circles in the entire State.
The population for the study included all women shea butter producers in Niger and Nasarawa states of Nigeria. Sampling of respondents was done using the multi-stage sampling process. The first stage involved the purposive selection of zone A (Niger South) and Western zone in Nasarawa State for their more intensive shea butter production activities. In each State the zone like the other zones had 10 extension blocks. Each block had 20 registered women shea butter producers making a total of 200. In the second stage 50% of the sample frame i.e. 100 women shea butter producers, were randomly selected for the study.

Data required to accomplish the objectives of the study were obtained from primary (questionnaire/interview schedule) and secondary (i.e. textbooks, journals and publications) sources. A comprehensive open and close-ended questionnaire/interview schedule was developed and administered to the women shea butter farmers who constitute the target population of the study. Secondary data were collected from literature and records of the ADPs.

Data collected were analyzed using descriptive statistics such as chart and frequency value (mean and standard deviations and percentages) and inferential statistics (t-test).

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Results and Discussion

Socio-Economic Characteristics of Respondents

Table 1 shows the socio-economic characteristics of the respondents. The result for age revealed that the majority (58.3%) of the shea butter producers in the study area were within the age bracket of 30-39 years, 26.9% were within 40-49 years, 11.9% were less than 30 years while 1.6% were within 50-59 years of age. The average age of the respondents was 36 years (35 years for Nassarawa and 37 years for Niger respondents) suggesting that the producers were young. This probably indicates that shea butter production is an energy consuming activity that would be too stressful for older persons to engage in hence the predominance of young persons in the business. Reports by Ani, Aondona and Soom (2012) confirm this finding and reported an average age of about 30 years for shea butter processors. However, studies by Matanmi, Adesiji, Olasheinde and Oladipo (2011) revealed that shea butter producers were generally older with over 80% of their respondents being above 40 years old.

The pooled results (Table 1) for the marital status of the respondents showed that most of the respondents were married with a percentage of 95.3%. The fact that almost all those involved in shea butter production were married (and this holds true for respondents in Niger, 90.6%, and Nassarawa, 100%, States), is an indication that they engaged in it to cater for their families. The level of divorce among the respondents was very low with a percentage of 1%. This suggests that the family setting is closely knit. The findings agree with the results of Moore (2008) who reported that most shea butter producers were married. An examination of the respondents' household size showed that about 46.6% had 5-7 persons living with them, about 19% had 8-10 persons staying with them while 22.3% had over 10.

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Table 1: Socio-economic Characteristics of Respondents

	Categories	Niger %	Nassarawa %	Total %
Age (range)	<30	7.3	16.5	11.9
	30-39	58.3	60.8	59.6
	40-49	31.3	22.7	26.9
	50-59	3.1		1.6
		5.2		2.6
Marital status	Single	90.6	100	95.3
	Married	2.1		1
	Widow	2.1		1
	Divorced	16.7	7.2	11.9
Household size range	4 & below	58.3	35.1	46.6
	5-7	15.6	22.7	19.2
	8-10	9.4	35.1	22.3
	>10	86.5	85.6	86
Educational level	No formal education	11.5	11.3	11.4
	Primary sch.		3.1	1.6
	SSS	2.1		1
	NCE	7.3	7.2	7.3
Religion	Christianity	92.7	92.8	92.7
	Islam			
		80.2	99	89.6
Major occupation	Farming	5.2	1	3.1
	Civil service	100	100	100
	Total	79.2	14.4	46.6
Production experience	1-5	11.5	48.5	30.1
	6-10	6.3	25.8	16.1
	11-15	3.1	11.3	7.3
	>15	14.6	49.5	32.1
Membership of Farm Associations	Fadama association	1	12.4	6.7
	Shea fruit association		30.9	15.5
	Ena eko kpara chizhi	2.1	6.2	4.1
	Cooperatives	82.3	1	41.5
	None			

The average household size was 8 (7 for Niger and 9 for Nassarawa state respondents) indicating that the respondents had several persons staying with them. No doubt this large number of persons staying with them can assist them in the shea butter production operation. A household size of 7 was reported for shea butter producers in Benue state by Ani *et al*., (2012).

On educational status, the result also revealed that majority of them was not literate with a percentage of 86% having no formal education. About 11.4% attended primary school while 1.6% went to secondary school. Respondents from both states showed similar poor educational background (i.e. no formal education) with a percentage of 86.5% and 85.6% for Niger and Nassarawa state respondents. This finding suggests that most shea butter producers in the study area were non-literate with very few having formal education. This finding agrees with the report of Matanmi *et al.,* (2011) who found that most shea butter producers were not educated. This their low level of education may affect their adoption of new practices such as improved processing methods since it is asserted that being educated enables farmers to understand more easily the use of improved technologies (Tshivunza, *et al*, 2001).

Almost all the respondents interviewed were Muslims with a percentage of 92.7% (Table 4.1). This suggests that the study area was largely a Muslim area. Another implication of

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this is that the religion is not against the adherents engaging in shea butter production. The pooled results for the major occupation of the respondents revealed that the majority (89.6%) of them were farmers. This is true for the respondents in both states (80.2% for Niger and 99% for Nassarawa state). Very few (7.3%) were into trading as their major occupation

In terms of experience in shea production the result of Table 1 showed that 46.6% of the respondents have been involved for 1-5 years, 30.1% have been for 1-6 years while 16.1% have been involved for 11-15 years. The average shea butter production experience of the respondents was 11 years showing that the respondents were quite experienced in shea butter production. The results for both states indicate that Nassarawa state respondents had relatively more experience than Niger respondents with an average of 15 to 8 years respectively.

About 41.5% of the respondents were not members of any farm association. About 32.1% of them belonged to Fadama association, 15.5% belonged to Ena eko kpara chizhi group while only 6.7% belonged to shea butter fruit association. Membership of farm organizations has the benefit of enabling farmers' access information and capital among others (Madukwe, 2005).

Factors Influencing Respondents' Involvement in Shea Butter Production

Table 2 indicates that 65.3% of the respondents went into shea butter production because of health challenges/problems facing people, family decision (24.9%), tradition (6.7%) and religious reasons (2.1%). The result indicate that health grounds was the major reason why most respondents engage in shea butter production. Shea butter has a number of health benefits, the major one been that pure shea butter has excellent texture and improves the quality of skin and hair (Wikipedia, 2012). About 25% said their reason for involving in the production was because the family was into it. It is possible that the family were into it for purely economic reasons. Some were into it as a tradition i.e. that is what their parents' were doing, which they equally followed as their own line of business.

Table 2: Factors influencing respondents' involvement in shea butter production

	Niger	Nassarawa	Pooled
	%	%	%
Health problem	30.2	100	65.3
Family decision	45.8	4.1	24.9
Tradition	13.5	0.0	6.7
Religion	5.2	0.0	2.6
Others	4.2	0.0	2.1

**Multiple response*

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Relationship Between Factors Affecting Respondents' Involvement in Shea Butter Production and their Socioeconomic Characteristics

The regression results for factors affecting respondents' involvement in shea butter production are presented in Table 3. The F value for the pooled results, which is 49.07, was significant at the 5% level meaning that the model is appropriate for the analysis and that the influence of the independent variables on the dependent variable (i.e. participation level) is significant. Similarly, the State models had significant F values at the 5%. The adjusted coefficient of determination (R^2) square for the pooled results is 0.675. What this means is that the independent variables in the model explained about 67.5% of variation in the dependent variable. At the State level, the result for Niger state showed that the independent variables accounted for 74.4% while that of Nassarawa state was 37.9%, which means that the independent variables explained more of the dependent variable in Niger compared to Nassarawa state.
Five of the explanatory variables were significant for the pooled results namely age, household size, production experience, income and membership of cooperatives. However, when the two states are compared, while five of the independent variables were significant for Niger state (i.e. age, education, experience, income and membership of cooperative) result only three were significant for Nassarawa state (i.e. age, household size and income).

The pooled results for age had a coefficient of -0.084. Since the result is negative it means that younger producers participate more in shea butter production activities than older producers. Younger persons have more energy to embark on more of the activities which can be quite tasking for example collection/picking of the fruits. Age of farmer has been reported to have a positive effect on their participation in agricultural project with younger farmers participating more in agricultural tasks (Nxumalo and Oladele, 2013).
The result for household size was positive (b = 0.091), which means that respondents with larger families participated more in the production activities than those with smaller families. This is possible since family members can assist or support them in the production activities. The result for production experience was also positive (b = 0.175), which means that respondents with longer experience in shea butter production participated more in the production activities than those with lesser experience. It is possible that those with longer experience have come to realize the benefit of participating more in the activities in order to get more output and income. Gani and Adeoti (2011) noted that the level of farmer participation in a production activity is an important determinant of output and income.

Income of the respondents was positively related to their level of participation since the coefficient is positive (i.e. b = 0.203). The positive sign means that respondents with higher income participated more in the production activities than those with lesser income. This is possible since with more money respondents can afford to purchase or hire inputs required for the production of shea butter. The results agree with the report of Nxumalo and Oladele (2013) who found a positive and significant relationship between income of farmers and their level of involvement in agricultural project. Similar

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relationship between income and participation in farm project was reported by Damiss, Samndi and Yohanna (2007). The relationship between respondents' membership of cooperative and participation in shea butter production was positive (b = 1.845). The positive sign or relationship means that respondents who belonged to cooperatives participated more in shea butter production activities. This suggests that belonging to a cooperative encourages producers to participate more in the production activities.

Table 3: Socioeconomic factors affecting respondents' involvement in shea butter production

Independent variables	Niger		Nassarawa		Pooled	
	B	T	B	T	B	T
Constant	3.309	2.924	3.973	1.708	3.014	2.454
Age	-0.077*	-3.87	-0.089*	-2.282	-0.084*	-3.898
Household size	0.042	0.919	0.139*	2.623	0.091*	2.300
Educational level	0.385*	2.214	0.273	0.919	0.108	0.575
Production experience	0.269*	7.957	-0.006	-0.141	0.175*	5.758
Income	0.125*	2.046	0.210*	3.134	0.203*	2.674
Membership of cooperative	0.944*	3.784	0.045	0.041	1.845*	6.057
Contact with extension agents	0.256	1.941	0.375	1.244	0.231	1.497
Perceived benefits	0.012	0.149	0.104	0.439	0.075	0.722

**Significant at the 5% level (critical t = 1.96)*

Conclusions and Recommendations

Shea butter production process is dominated by women with no formal education and their participation in the process was affected by or related to some socio-economic characteristics of the women. The study recommends among others that acquisition of formal education, large household size and membership to cooperative societies are necessary for enhanced production for higher income from shea butter production for women.

References

Ani, D.P., Aondona, G and Soom, A. (2012). Economic analysis of shea butter plant in Ukum Local Government, Benue State, Nigeria. *American-Eurasian Journal of Agronomy* 5 (1): 10-18, 2012

Damiss, M.A., Samndi, R. and Yohanna, M. (2007). Women participation in agricultural production: A probit analysis. .*J of Applied Sciences, 7: 412-416.*

Gani, B.S. and Adeoti, A.I. (2011). Analysis of market participation and rural poverty among farmers in northern part of Taraba State, Nigeria. *J of Economics,* 2(1): 23-36

Madukwe, M.C. (2005). Agricultural Extension Administration. In: Adedoyin, S.F. (ed). Agricultural Extension in Nigeria*,* Agricultural Extension Society of Nigeria, Ilorin.. 182-185.

Matanmi, B.M., Adesiji G.B., Olasheinde E.M and Oladipo F.O. (2011). Assessment of usage of upgraded shea butter processing technology by women processors in Kwara State, Nigeria. *Agrosearch*. www.ajol.info/index/agrosh/artucle/view/75054.

Moore, S. (2008). The Role of *Vitellaria paradoxa* in poverty reduction and food security in the Upper East Region of Ghana Earth and Environment: University of Leads, University of Leads Press pp 62

Nxumalo, K. K. S. and Oladele, O. I. (2013). Factors affecting farmers' participation in agricultural programme in Zululand District, Kwazulu Natal Province, South Africa. *Journal of Social Science*, 34(1): 83-88

Okolo, E.C**.,** Okolo, C.C and Enaberue, L.O. (2009). The role of government and community leaders in domestication and protection of the shea tree in Nigeria. *J. Agric. Forestry and Social Sciences.* Vol. 7(1): 99-107.

Suleiman, M.A.I. (2008). Assessment of potentials for shea nuts in selected LGAs of Niger State. Proceedings of Stakeholders and Sensitization Workshop on Potentials and Constraints on Shea Nut Production in Niger State. October 2008

Tshivunza, M.; Lemchi, I. J. and Uloma, O. (2001). "Factors influencing the spread of cooking banana processing methods in Nigeria." *Tropicultural* 19 (2): 90-96.

Wikipedia (2012). Shea butter. http://en.wikipedia.org/wiki/Shea_butter