



# Perception of Shea Nut Tree as an Economic Tree among Farmers in Oyo State, Nigeria

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## Abstract

The importance of shea tree to the people of south-western Nigeria cannot be over emphasized considering both the economic and environmental uses of the tree. However, efforts have not been made to propagate its production by the farmers as the shea tree still grows in the wild state. It would be worthwhile to investigate farmers' perception of shea nut tree as an economic tree and their attitudes toward the conservation measures needed to prevent its extinction. Multi-stage sampling technique was used to select 160 farmers for the study. A structured interview schedule was used to collect data from the respondents. Descriptive statistics of means and percentages were used to describe the data while correlation coefficients were employed to determine the relationships that exist between farmers' perception and their socio- economics characteristics. A larger percentage of the farmers claimed the awareness of the potential products of shea nut trees. Majority (90.6%) of the respondents perceived shea tree as an economic tree and indicated that it provides income for women and children that gather the fruits. Most of the farmers had favourable attitude toward shea nut tree as an economic tree. Land ownership status ( $r = 0.536$ ), age ( $r = 0.875$ ), education ( $r = 0.725$ ), farming experience ( $r = 0.508$ ), household size ( $r = -0.817$ ) and farm size ( $r = -0.673$ ) had significant influence on the perception of farmers. The study therefore recommends that the extension agencies should play significant role in educating the farmers on the importance of conserving the trees to sustain its economic benefits.

### Keywords:

Perception, Shea nut, Economic tree, Farmers

## INTRODUCTION

Scientifically, the shea tree is known in the past as 'Butyrospermum paradoxum', but is now called '*Vitellaria paradoxa*'. It is widely spread across the savannah regions of Nigeria. The shea tree grows very well on a wide range of soils, including highly degraded, arid, and semi-arid and rocky soil. (Dogbevi, 2007). Shea fruits consist of a thin epicarp and a soft mesocarp enclosing a single seed (occasionally two to four seeds). The epicarp and mesocarp together make up 33–75% of the fresh fruit weight, with an average of 55% (Elias, *et al.*, 2006).

Shea tree is the most prevalent arboreal species of West African parklands, which provide vital products and ecological services to the semi-arid region (Becker and Starz, 2003). The resource's main traditional role is associated with its oil (shea butter), extracted from shea kernels, that represents the primary source of fat in local diets. Shea also contributes to the generation of crucial foreign exchange revenues in many countries of the sub-region, ranking third among exports from Burkina Faso in the 1980s (Lamien *et al.*, 2007). Traditionally, African women involve in collection of shea nuts which are transformed into a pure, pale yellow butter after a long conditioning and cooking process. While nut gathering and processing were formerly exclusively rural activities, many factors have led to the expansion of urban shea projects. It is widely known and used as a skin ointment and for skin care and hair care, as well as for hydrating, protecting and massaging babies. The roots, leaves, and bark of the tree are also used medicinally for treating mouth sores, boils, burns, diarrhoea, as a vermifuge, and as eye-wash against spitting cobra venom (Neuwinger, 1996). Large *Vitellaria* trunks may be used to make mortars for pounding grain. The wood is also used in building construction and is made into charcoal.

The shea tree constitutes an important source of raw material for gum and rubber industries. The shea fruit also serve as a source of food to many people and as an income generating activity for most of the women that gather the fruits as the ripening of the fruits coincide with the lean season of food crops production. The shea tree can be used to combat the problem of de-

sertification. Men, women, and children eat and appreciate the pulp. Fresh fruits are also sold in local markets. However, despite the economic and environmental benefits of the tree, efforts have not been made to propagate its production by the farmers as the shea tree still grows in the wild state. Another worrisome development is the people's habit of destroying the trees for charcoal production which may eventually lead to environmental degradation, deforestation and loss of vegetative cover and resulting to water and soil erosion. Non-replacement or domestication of the shea trees may lead to its extinction in the nearest future. This study is designed to investigate farmers' perception shea nut tree as an economic tree and their attitudes toward the conservation measures needed to prevent its extinction.

The main objective of the study is to determine farmers' perception of shea tree as an economic tree. The specific objectives are to:

- 1- Determine farmers' attitudes toward the economic and environmental contributions of shea tree to the farming system practice.
- 2- Examine the level of awareness of potential products of shea nut tree among farmers in the study area
- 3- Determine the influence of socio-economic characteristics of the farmers on their perception.

## MATERIALS AND METHODS

### Study area

The study was conducted in Oyo state southwestern Nigeria in 2010. The state is divided into four agricultural zones namely: Ibadan/Ibarapa (Forest and derived savannah), Oyo (Derived savannah), Ogbomoso. (Derived savannah) and Saki (Guinea savannah). A multi-stage sampling procedure was adopted in selecting respondents for this study. The first stage include the selection of two agricultural zones (Ogbomoso and Saki zones) due to concentration of shea trees in these zones. Four Local Government Areas (LGAs) were randomly selected from the two zones with two LGAs (Orire and Surulere) in Ogbomoso zone and two LGAs (Atisbo, and Olorunsogo) in Saki zone. Four rural villages were further selected from each of the four selected LGAs to arrive at a total of 16 villages. Thereafter 10 farmers were selected randomly

from each village to arrive at a total sample size of 160 respondents.

**Research Instrument**

A well-structured interview schedule was used for data collection. The instrument was pre-tested on 30 respondents in the adjacent LGA not included in the final survey. The instrument validation was done by a team of experts in the fields of Agronomy and Extension. A test-retest check was conducted to establish the reliability of the instrument and a reliability coefficient of 0.88 was obtained for the test which was adjudged reliable for data collection.

**Measurement of variables**

Socio-economics characteristics of the respondents were measured by collecting information on the age, sex, and marital status, and educational attainment, farm size and land ownership status. Perception and attitude of the respondents were measured through their responses to some statements to reveal their view toward shea nut tree production and its economic importance.

**Method of data analysis**

Descriptive statistics such as percentages; means; standard deviations were used to describe the data and Pearson correlation coefficient was used to test the relationship between the selected socio-economic characteristics and farmers' perception.

**RESULTS AND DISCUSSION**

Results of socio-economic characteristics of the farmers show that majority (52.5%) of the respondents were in the age group of 46 – 55 years with mean age of 47.6 years an indication that they are in their active stage of life. About 90% of the respondents were males while 10% were females (Table 1). This could be due to the fact that women only gather the shea fruits from their husbands' farms and probably unqualified to take decision trees found on such farms. The study also revealed that larger percentage (87.5%) of the respondents had formal education and 12.5% having no formal education. This high level of literacy is likely to make them

more responsive to the adoption of technology needed for shea tree development. Majority (58.8%) of the respondents had spent between 5 – 15 years in farming with mean farming experience of 17.5 years. The mean farm size was 2.3 hectares while, the majority (78.7%) had farm land of between 1 – 5 ha an indication that the respondents are small holders. The ownership status of land showed that 61.9% of the respondents inherited their farm lands while 28.1% indicated that their farm lands were leased to them. Only 10% of the respondents rented their farm lands. This land ownership pattern could enhance conservation measures to be taken on shea trees by the farmers (Table 1).

Table 1: Distribution of Respondents According to Personal Characteristics (n = 160)

Characteristics	Frequency	Percentage
<b>Age (Years)</b>		
25 – 35	23	14.4
36 – 45	40	25.0
46 – 55	84	52.5
> 55	13	8.1
Total	160	100
<b>Education</b>		
No formal education	20	12.5
Adult Education	46	28.8
Primary education	89	55.6
Secondary education	5	3.1
Total	160	100
<b>Sex</b>		
Male	144	90.0
Female	16	10.0
Total	160	100
<b>Farming experience (years)</b>		
5 – 15	94	58.8
16 – 25	34	21.3
26 – 35	28	17.5
> 35	4	
Total	160	100
<b>Farm size (Ha)</b>		
1 – 5	126	78.7
6 – 10	21	13.1
11 – 15	10	6.3
> 15	3	2.5
Total	160	100
<b>Land ownership status</b>		
Inheritance	99	61.9
Leasehold	45	28.1
Rent	16	10.0
Total	160	100

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Table 2: Distribution of respondents by awareness of potential products of shea tree

*Awareness of potential products of shea tree	Frequency	Percentage
Processed Shea butter export	4	2.5
Raw materials for manufacturing chocolates	7	4.4
Edible oil	152	95.0
Use in cosmetics and pharmaceutical industries	5	3.1

\* Multiple responses

Findings from the study revealed that majority (95%) of the farmers claimed the awareness of edible oil as a potential product of shea tree while only 2.5% were aware of processed shea butter for export and 4.4% reported the awareness of shea tree providing raw materials for manufacturing chocolates. However, few (3.1%) respondents were quite aware of shea tree as being useful for cosmetic and pharmaceutical industries (Table 2).

The perception of 90.6% of the farmers was considering shea nut trees as providing income for women and children that gather the fruits whereas 60% of the farmers perceived shea fruits, butter and oil as important source of calories. Majority of the farmers perceived roots, barks and leaves of the tree as being useful for treating medical conditions and almost (96.9%) perceived shea tree as materials for making hoe handle, pestle, mortar and talking drum (Table 3).

Table 3: Perception of farmers on shea nut trees (n = 160)

Perception	Frequency	Percentage
Provide income for women and children that gather the nuts	145	90.6
Shea fruit, butter and oil are important source of calories	96	60
Shea tree roots bark and leaves used for treating different medical conditions.	123	76.9
Substitute to cocoa economic value.	No response	
Wood suitable for making hoe handle, pestle mortar and talking drum.	155	96.9

The study reveals that farmers in the study area had favourable attitude towards shea nut tree as economic tree. This is obvious as they

Table 4: Attitude of respondents towards shea nut tree as an economic tree (n = 160)

Statement	Mean	SD
Farmers should take a responsible role in protecting shea tree on their farms against charcoal burning and bush burning	3.9	1.07
Giving the opportunity I will cultivate the shea tree on my farmland owing to the benefit derived from its products	4.21	0.565
I can give equal protection to shea woodland as much I can give to other tree crops	3.5	1.176
Extension service has a significant role to play in shea tree production	3.6	1.227
There is need for more awareness on cultivation and preservation of shea trees	3.94	0.779
Charcoal burning is not a major threat to shea tree production	2.22	1.33
The benefits derived from shea tree warrant its cultivation on my farm	3.96	0.800
Shea woodland cannot be given equal protection as other tree crops	2.30	1.13
Shea tree is not an economic tree and will not yield as much as income as other tree crops	2.76	1.043
The income realized from the shea tree cannot improve my families' standard of living such as paying school fees and clothing	3.48	1.176

were in agreement with most of the items used to measure their attitude towards economic importance of shea nut tree in their farming systems. Their readiness to protect shea nut tree against charcoal and bush burning and cultivating of shea tree if given the opportunity; is a clear indication of their perception of shea nut tree as an economic tree (Table 4).

Farmers' perception of shea nut tree as economic tree was positively correlated with education. This is an indication that the more educated the farmers, the greater their ability to perceive the economic benefits accrue to shea nut tree understands and manage the related technologies for its production. Farming expe-

Table 5: Results of relationships between farmers' perception and some selected socio-economic characteristics

Variable	r	p
Age	.875*	0.023
Education	.725*	0.000
Farming experience	.508*	0.001
Household size	-.817*	0.000
Land ownership	.536*	0.010
Farm Size	-.673*	0.034

\* Correlation is significant at the 0.05 level (2-tailed).

rience positively and significantly ( $P \leq 0.05$ ) influenced perception of farmers (Table 5). Farmers with accumulated farming experience may have acquired encouraging returns from shea nut trees in the past and thus be encouraged to sustain the anticipating benefits (Bonabana-Wabbi, 2002). However, farm size negatively influenced farmers' perception implying that the larger the farms size the higher the perceived benefits that can be derived from the shea nut trees. A plausible explanation for this could be that, more shea nut trees could be found in larger farms compared to the smaller farms. The household size was significantly and negatively related to farmers' perception. A negative sign for household size suggests that perception was favourable among larger households because they attach greater importance to food security than smaller households hence, will likely to be interested in getting additional source of income.

### CONCLUSION

It was observed that farmers had knowledge of potential products of shea tree and had a favourable attitude toward shea nut tree as economic tree. Farmers perceived that shea nut trees provide income for the household, a source of calories, useful in treating medical conditions and materials for making drums and mortal. This study has provided insights into the relationships between perception and farmers' demographic characteristics. Increasing farmers' awareness on potential products of the shea nut trees and its economic benefits will enhance its conservation among farmers. Intensification of research efforts in designing appropriate technology that will encourage shea nut tree production and its conservation is highly recommended.

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