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Analyzing the Structure and Performance of Shea Butter Market in Bosso and Borgu Local Government Areas of Niger State, Nigeria

I. D. Garba[1], S. A. Sanni[2] and C. O. Adebayo[3]

[1]*Agricultural Economics Division, Nigerian Institute for Oil Palm Research (NIFOR). PMB 1030 Benin City*
[2]*Agricultural Economics & Rural Sociology Department, P.M.B 1044, Ahmadu Bello University, Zaria, Kaduna State, Nigeria*
[3]*Agricultural Economics & Extension Technology Department P.M.B 65, Federal University of Technology Minna, Niger State, Nigeri*
[1]*ibrohemd@yahoo.com,*[2]*adsanni@yahoo.com,*[3]*cadebayo2001@yahoo.com*

Abstract

Inefficiency in Shea butter marketing is one of the major challenging phases in Shea value chain. Specifically, the research work analyzes the structure and performance of Shea butter market and the constraints associated with the marketing of Shea butter within the sampled communities in Borgu and Bosso local government areas of Niger state, Nigeria. Four communities each were purposively selected from two local government areas of zone II and III of Niger state, Nigeria, 41% of the total number of stratified Shea butter marketers of rural buyers, wholesalers and retailer in each village were randomly sampled to whom the questionnaires were administered; this draw the actual sample size of one hundred and two (102) Shea butter marketers used for the study. Data collected were analyzed using descriptive statistics, Gini Coefficient (Lorenz curve), marketing efficiency and margin. The study revealed that more than 90% of those involved in the marketing of Shea butter were women and more than 70% were married while 48% of the respondents had no formal education. The result also revealed an equal distribution of Shea butter amongst the three categories of the market participants (rural buyers, wholesalers and retailer) with Gini coefficients values of 0.077, 0.083 and 0.12 respectively. The marketing efficiency of rural buyer, wholesaler and retailer were 788%, 765%, and 667% while the marketing margin were 13.4%, 12.7% and 9.8% respectively. The major problems faced by Shea butter marketers were lack of standard butter measurement, poor access to credit, poor storage facilities and transportation means, low and unstable market prices. Effort to mitigate these problems entails Shea product certification and quality control, improvement of transportation means, provision of credit and market facilities, these will not only provide ease way of marketing of Shea butter but will also provide a practical, market-based incentive for marketers in the provision of substantial income to support their basic needs.

Keywords*: Inefficiency, Shea-butter, stratified, formal-education, market-based*

1. Introduction

1.1. Background to the Study

Nigerian Agriculture contributed about 43.64 per cent of total annual Gross Domestic Product (GDP) in 2011 and 34.47 in the first quarter (Q1) of 2012 and also employs more than 60 per cent of labour force [1]. The Agricultural sector is said to have contributed 81.9 and 82.3 of total income from non-oil exports in 2004 and 2005 respectively [2].

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Thus, Nigerian agriculture is an important sector of notable relevance in economic development and growth. Presently Shea nut tree has gained importance as an economic crop because of the heavy demand for its butter, both locally and internationally, following increasing international interest in Shea butter as a cocoa butter equivalent in confectioneries, pharmaceutical and cosmetic industries. Shea butter is a useful cocoa butter substitute because it has a similar melting point (32–45℃) and high amounts of di-stearin (30%) and some stearo-palmitine (6.5%) which makes it blend with cocoa butter without altering flow properties. The high proportion of unsaponifiable matter, consisting of 60–70% triterpene alcohols, gives Shea butter creams good penetrative properties that are particularly useful in cosmetics [3]. Shea nut products are used domestically and exported especially to Europe. Presently Shea is exported to France, Great Britain, the Netherlands, Denmark, North America and Japan [4]. In these countries it is processed in a wide range of food products including chocolate and it is also becoming more popular in the cosmetic industry [5]. Shea butter has lately assumed an unprecedented height in international trade more so because the western world has recognized the considerable health and beauty enhancing benefits of Shea butter. Shea nut and butter are value added products with outstanding export growth potentials, especially for West Africa.

Shea tree mostly occurs in 19 countries across the African continent, namely: Benin, Ghana, Chad, Burkina Faso, Cameroon, Central African Republic, Ethiopia, Guinea Bissau, Cote D'Ivoire, Mali, Niger, Nigeria, Senegal, Sierra Leone, Sudan, Togo, Uganda, Zaire, and Guinea [6]. The Shea fruit pulp has been confirmed to be generally very nutritious containing large quantities of protein and minerals and the butter is highly medicinal. The fruits when ripen play a key dietary role to farmers at the beginning of the cropping season [7]. Similarly, the protein-rich caterpillars of Cirina butyrospermi associated with Shea trees are considered a delicacy among the Yoruba and Nupe as well as the Tiv ethnic groups in Nigeria ([8]; [9]). It was reported that the prospect of harvesting the caterpillars was the only reason some Food and Agricultural Organization farmers allowed the tree to remain on their farmlands [10]. The Shea tree has a lot of end-use applications. These include: valuable butter for cooking, cosmetics and skincare, pharmaceutical and medicinal. The butter is extracted from the seed which may have up to 50% oil content .The process involves crushing and milling the Shea nuts before kneading with water and skimming the surface to collect the oil. The refined Shea butter is used as a substitute for margarine and cocoa butter in the food industries. Destruction of the Shea tree is prohibited in most parts of West Africa because of the nut and butter which provide a valuable source of food, medicine and income for the people.

In Nigeria Shea butter is obtained from Shea nut trees (*vitterlaria paradoxa*) that grow wild in the forest in large commercial quantity across many states of the country within the guinea, and sudan-sahelian region. Studies on the density importance of Shea trees in these ecological zones namely: derived guinea savannah, northern guinea savannah and sahel, showed that the average overall density for this species of Shea tree is 8.4 plants/ha [11] Based on recent events, the interest on the Shea butter produced from Shea nut for industrial application in food, cosmetics, pharmaceutical and traditional needs at national and international levels has increased. Because of its enormous usefulness in the production of non-timber forest product, it is also fast gaining attention of agro forest researchers and breeders as a tree with very rich potentials that is worth scientific investigation for the purpose of its domestication and subsequent improvement as an agricultural tree crop. The Federal Government's increasing awareness of the importance of Shea butter tree as an industrial tree crop with high potentials for foreign exchange earnings and in recognition of the need to find substitutes for the rather expensive cocoa products made Shea tree one of its mandate cash crop for mass production through the national accelerated industrial crops production programme [12]. This decision is to diversify the nation's economy through maximizing the exploitation of the vast Shea

resources to increase the nation's foreign exchange earnings from other sources rather than petroleum.

1.2. Statement of the Research Problem

The harvesting, utilization and marketing of indigenous Shea fruit, nuts and butter have been central to the livelihoods of majority of rural communities throughout Africa ([13]; [14]). The marketing of Shea butter is one of the most challenging stage in the Shea value chain [15]. Shea butter does have a higher value than Shea nut, but the value depends very much on the market on which it is sold. In spite of the high demand for domestic consumption, lubrications, pharmaceutical and confectionary industries, the Shea butter sold is still of low quality to meet both local and international market standard ([15]; [16]), and that there still exist a wide variation/gap between the physical input level, potential output that is available for sale and the market price of the Shea butter. No estimates exist of the overall balance between cost of input energy and the economic profit from the sale of Shea butter. The income generated is generally low [17]. In addition, the productivity ratio which measures the efficiency in performing marketing service within the business scope of Shea butter marketing need to be analyzed to ascertain the ratio of output to input used; a condition necessary to making more profit. Processed Shea nuts and butter are taking to the communities' local markets in varying packaging materials of varying sizes. Lack of standard measurement on the other hand, product certification and quality control are also a major threat to Shea butter marketing system. A latent export market exists in EU, USA, Japan, Russia and Canada but due to lack of quality standards, the Nigerian Shea butter is considered to be sub standard at the international market and this attract a low price. The butter quality determines the market value both at the local and world market. Higher-quality butter will fetch a higher market price, this however calls for an intervention to enhance the butter quality and improve the Shea butter traditional marketing system. The questions to be addressed by this study are:

1. What are the socio economic characteristics of the respondents involved in the marketing of Shea butter?
2. What is the market structure of Shea butter
3. What is the market performance of Shea butter within the sampled communities?
4. What are the constraints associated with the marketing of Shea butter?

1.3. Objectives of the Study

The broad objective of this study is to analyze the Shea butter market structure and performance in Bosso and Borgu local government areas of Niger state, Nigeria. The specific objectives addressed in this research work were to:

1. identify and describe the socio economic characteristics of respondents involved in the marketing of Shea butter,
2. analyze the Shea butter market structure
3. determine the Shea butter market performance and,
4. identify the constraints associated with the marketing of Shea butter within the sampled communities.

1.4. Justification of the Study

The results of a socio-economic study of Shea butter marketing will throw more light on the market structure, performance and other marketable qualities of the crop. The findings of the study will not only depict the market performance and other marketable potential of Shea butter, it will also serve as a guide for policy makers to effectively plan for the growth and development of the industry through formulating effective market policies. The research findings will also divulge problem areas for restructuring. It will also induce Shea marketers to move into commercial marketing of the crop given reliable

information on market structure and how efficient as well as how effective is the marketing of Shea butter within the study area. On the other hand, Shea butter marketers, who have become more enterprising about marketing of the butter, will find the research findings useful in readjusting their resources in order to generate income to sustain their families and improve the quality of their lives. The study will also serve as a guide for further research in Shea production, processing and marketing.

2. Literature Review

2.1. Shea butter Tree in Africa

Shea tree *Vitellara paradoxa* is indigenous to the guinea and sudan savannah zone from Senegal to Sudan, and to western Ethiopia and Uganda, in a belt 500–700 kilometres wide ([18]; [3]). The trees grow mostly in Africa and are found in the dry savannah belt of West Africa which encompasses the north central region of Nigeria. The Shea nut tree is an economic crop indigenous to the guinea and sudan savannah zones of Nigeria, grown between latitudes 7^0N -12^0N and it grows naturally in the wild throughout the "Shea belt" including Niger, Nasarawa, Kebbi, Kwara, Kogi, Adamawa, Benue, Edo, Katsina, Plateau, Sokoto, Zamfara, Taraba, Borno and Oyo [11]. Shea tree produces yellowish fruits, which are ellipsoidal in shape. The fruit is made up of the soft and the sweet flesh and a dark brown seed. When the seeds are dried, the hard skin is cracked to expose the nut. Shea nut has various vernacular names in many Nigerian tribes: Hausa (*Ka'danya),*Nupe *(Eko),*Gwari (*Kombwa),* Fulani (*Kareje),* Igbo (*Okwuma),*Yoruba (*Orioyo),* Arabic (*Lulu).* Based on distribution, two species of the product has been identified, namely: *Vitellaria paradoxa* (the western kind) and *Vitellaria nilotica* (the eastern kind). *Vitellaria paradoxa* is produced mainly in the West African region while *Vitellaria nilotica* grows in northern Uganda and southern Sudan.

2.2. Economic Importance of Shea Products

About 45 percent of Nigeria's land area is suitable for the growth of Shea plant. Although it appears to be a rather obscure wild space growing side by side with arable, it is widely known, valued and exploited by the natives in all the areas where it grows [19]. Currently, Shea is undergoing renewed demand from the high value cosmetics companies and for this market sector, the very fact that Shea remains a wilderness crop that it is produced naturally, that it has cultural and medicinal qualities and is collected and processed by women's groups in remote rural areas, all combine to create a fashionable marketing scenario for high profile cosmetics products. The trees are highly valued by the local communities not only for the economic and dietary value of the cooking oil, but also for the fruit pulp, bark, roots and leaves, which are used in traditional medicines and for the wood and charcoal used for building and cooking. Shea kernels have substantial economic importance to rural people in Nigeria as they consist of 55 percent oil [7]. Shea butter is principally composed of five fatty acids: palmitic, stearic, oleic, linoleic and arachidic, they constitute 8.4%, 50.2%, 62.1%, 10.8% and 3.5% of the butter respectively. In an extensive study of 42 Shea populations in eleven African countries, [20] found out that stearic and oleic acids together accounted for 85 to 90 percent of the fatty acid in most samples, and that the high stearic acid content of Shea butter (most especially the *V. Paradoxa*) was responsible for the solid consistency that made this butter distinctive. The interest in butter for industrial application in food, cosmetics, pharmaceutical and traditional needs at national and international levels has recently increased.

2.3. Agricultural Marketing

Agricultural marketing covers the services involved in moving an agricultural product from the farm to the consumer. Numerous interconnected activities are involved in doing this, such as planning production, growing and harvesting, grading, packing, transport, storage, agro- and food processing, distribution, advertising and sale. Some definitions would even include the acts of buying supplies, renting equipment, (and) paying labour, arguing that marketing is everything a business does [21]. Such activities cannot take place without the exchange of information and are often heavily dependent on the availability of suitable finance. Agricultural marketing can also be defined from both micro and macro view points. The micro view point is concerned with individual participants in marketing, be it a farmer or a business firm. From this perspective, agricultural marketing can be defined as the performance of all business activities which direct the forward flow of goods and services to consumers in order to accomplish the producer's objectives. While macro view point examines the total system of economic activities concerned with the flow of agricultural products from producers to final consumers. Marketing, at the macro level, includes processing, packaging, storage, transportation, pricing, financing, risk bearing and even product design [22]. Markets play an important role in rural development income generation, food security, developing rural-market linkages and gender issues.

2.4. Shea Butter Market Prospects

Reinforcing the economic value of the Shea-butter tree through expanded markets, the Shea Project will receive an enthusiastic response from participating farmers, who have become serious about protection of Shea woodland - and serious as well about production of the finest quality Shea-butter at a premium price. In addition, assisting farmers in the area of marketing of Shea nut and butter will not only attract more income to the farmers but will also increase the nation's revenue from its sale in the international market. Prices across the Shea belt appear to be remarkably similar, and those that differ, tend to reflect higher transport costs [23]. This indicates fairly free transmission of market information and a well integrated market. The Shea market is divided into three distinct categories:- (i) high volume, low value locally processed products (ii) high volume, intermediate value export to the food processing market (iii) low volume, high value export to the cosmetics market. Shea butter is currently trading on the international market at 50-60 US dollar cents per kg, (US$500 / metric tons). It is estimated that only 5% of the 65,000 metric tons exported to Europe and North America is used in the cosmetics industry, however, in a report [24] this level is rising. Recent changes in regulations on the use of substitutes for cocoa butter have increased demand from chocolate confectioners as it is now possible to blend up to 5% non cocoa butter equivalents into a chocolate product and still sell it with a chocolate reference. The price of Shea in this case is driven by the cost of cocoa butter. In the current climate of worldwide declining commodity prices, this will mean continued depressed prices into the foreseeable future. However, a recent wave of renewed interest from cosmetics houses, have also rekindling market interest in Shea butter. Whilst, this increase in demand represents a small change in global terms, such opportunities can have considerable benefits to the small groups of traders, mostly women that gather the nuts, process and trade the butter. For the cosmetics industry Shea has a combination of marketable attributes, Shea is:- (i) Harvested and marketed by women in rural areas, which suggests that income will accrue to the most vulnerable, as such this is an incentive to pay premium prices for Shea products. (ii) Shea is grown in a natural parkland system lending it "natural organic qualities", which are much is favour in industrial companies. (iii) Shea is considered to have traditional healing properties and this is a strong basis for building a "natural" identity. Thus Shea butter is considered to be a highly suitable candidate for special interest support through ethical trading, gender support and "natural"

labelling. These marketable qualities are becoming increasingly important market levers and if a quality product can be supplied on a regular basis, then the future market options for Shea has potential. However, in order to make this work, all the aspects in the marketing chain need to be highly polished and it will require a highly dedicated team, with considerable investment and business men to enter into the higher value markets.

2.5. Assessing the Structure and Performance of a Marketing System

In economics, market structure is the number of firms producing identical products. The main criteria by which one can distinguish between different market structures are: the number and size of producers and consumers in the market, the type of goods and services being traded, and the degree to which information can flow freely [25]. Market structure analysis emphasizes the nature of market competition and attempt to relate the variables of market performance to types of market structure and conduct. Market structure is a description of the number and nature of participants in a market. Market performance is a reflection of the impact of structure and conduct on product prices, costs, the volume and quality of output in a marketing system [22]. If the structure of a market is that of monopoly rather than pure competition, then one could expect poor market performance. Marketing performance measurement is a term used to describe the analysis and improvement of the efficiency and effectiveness of marketing [26]. This is accomplished by focus on the alignment of marketing activities, strategies, and measuring it with business goals [27]. It might be thought that the performance of a marketing system could be evaluated in terms of how well the agricultural and food marketing system performs what society and the market participants expect of it. However, it soon becomes apparent that marketing systems have multiple and often conflicting goals. Compromises and trade-offs will be necessary if the various participants in the marketing system are to be satisfied. For example, consider the perspectives of just three parties involved in agricultural marketing systems consumers, farmers, society and government. Consumers are likely to evaluate a marketing system in terms of its performance in avoiding high and fluctuating prices, shortages in supply and consistency in delivering products or produce of acceptable quality. Farmers' concerns could be rather different. Their criteria might include the capacity of intermediaries to exert undue influence on prices, the extent of competition in the sectors supplying farm inputs and accessibility of marketing infrastructure at reasonable cost (*e.g.*, suitable storage and transportation). Society is likely to give consideration to the marketing system's contribution to employment, its impact on the environment and the ethical standards to which it is perceived to adhere. Government's perceptions of a marketing system will also be coloured by its impact on employment. In addition, government will probably take into account the sector's contribution to investment, economic growth and the national treasury through its taxable income. Given these diverse perspectives, some of the contrasting measures that are commonly used in assessing the performance of a marketing system grips

1. The farmer's/grower's share of the retail price paid by the end user or consumer
2. The gross marketing margin or farm-retail price spread, and
3. The proportion of a consumer's income which must be spent on food.

Whatever the perspective from which a marketing system's performance is evaluated, the terms most commonly used are efficiency and effectiveness.

2.5.1. Gini Coefficient and Lorenze Curve

The Gini coefficient (also known as the Gini index or Gini ratio) is a measure of statistical dispersion. The Gini coefficient measures the inequality among values of a frequency distribution. A Gini coefficient of zero expresses perfect equality where all values are the same (for example equal possession of share of a particular product). A

Gini coefficient of one (100 on the percentile scale) expresses maximal inequality among values (for example where only one person has the entire product to be measured). The Gini coefficient can theoretically range from 0 to 1; it is sometimes expressed as a percentage ranging between 0 and 100. In practice, both extreme values are not quite reached. A low Gini coefficient indicates a more equal distribution, with 0 corresponding to complete equality, while higher Gini coefficients indicate more unequal distribution, with 1 corresponding to complete inequality. To be validly computed, no negative goods can be distributed. Thus, if the Gini coefficient is being used to describe product distribution inequality, then no farmer or marketer can have a negative product. An alternative approach would be to consider the Gini coefficient as half of the relative mean difference, which is a mathematical equivalence. The mean difference is the average absolute difference between two items selected randomly from a population, and the relative mean difference is the mean difference divided by the average, to normalize for scale. Gini coefficient is widely used in fields as diverse as sociology, economics, health science, ecology, chemistry, engineering and agriculture [28]. For example, in social sciences and economics, in addition to income Gini coefficients, scholars have published education Gini coefficients and opportunity Gini coefficients. In economics, the Lorenz curve is a graphical representation of the cumulative distribution function of the empirical probability distribution of wealth or distribution of product; it is a graph showing the proportion of the distribution of product assumed by the bottom *y*% of the values. It is often used to represent income or goods distribution, where it shows for the bottom *x*% of persons, what percentage *y*% of the total income or product they have [29]. The concept is also useful in describing inequality among the size of individuals in ecology, [30], and in studies of biodiversity, where cumulative proportion of species is plotted against cumulative proportion of individuals [31].

3. Research Methodology

3.1. Study Area

Niger state is located between latitudes 8^0 20′N and 11^0 30′N and longitude 3^0 30′E and 7^0 20′E. It is bordered on the North-East by Kaduna state and on the South-East by FCT, Abuja. It is also bordered on the North, West, south West and South by Zamfara, Kebbi, Kogi and Kwara respectively. It Shares a foreign border with the Republic of Benin in the North West. The state covers an estimated land mass of 86,000 square kilometres, taking about 10% of Nigeria's total land mass, of which 85% is arable land. The population of the state in 2012 based on the World Bank indicator growth rate is 4,581,078 persons consisting of 2,357,338 males and 2,223,740 females [32]. The soil type in Niger state are two: Ku soil and the Ya soil. The Ku soil has little erosion hazards, while the Ya soil has better water holding capacity. Generally, the fertile soils and hydrology of the state permit the cultivation of most of Nigeria's staple crops and still allows sufficient opportunities for grazing, fresh water fishing and forestry development.

Borgu local government lies between latitude 9^0N and 11^0 N and longitude 2^0E and 4^0E [33]. It is bounded to North by Kebbi State, to the South by Kaima and Baruten local government Areas of Kwara State, to the West by Benin Republic, and to the East by River Niger and Magama local government Area of Niger State. Its headquarters are in the town of New Bussa and in 2012 based on the World Bank indicator growth rate the LG has a population of 199,427, consisting of 102,463 males and 96,964 females [32]. Analysis of the temperature of the local government from 1986-2006 show that the highest mean monthly temperature was 41.1^0C while the lowest mean monthly temperature was 34.9^0C [33]. The mean humidity value was 74.8%, while the highest mean rainfall value was 201.2mm. The land lies predominantly in the guinea savannah

climatic zone, where all deciduous trees associated with grasses characterize the vegetation.

Bosso local government area of Niger State, Nigeria has an area of 1,592 km² and a population of 170,891 in 2012 based on the World Bank indicator growth rate [31]. It is located on longitude $6^0$02' East and latitude $09^0$41' North respectively [34]. Bosso area council is bounded to the North– East by Shiroro local government area, to the South – East by Paiko local government area, to the South – West by Gbako local government area and to the North –West by Wushishi local government area. Farming is the main occupation of the people of this local government area.

3.2. Sampling Procedure

Multistage sampling technique was used in the selection of respondents for this study. The three agricultural zones of Niger state namely: zone I, II and III which reflect the geographical structure of the state were critically examined. In the first stage two zones (II and III) out of the three agricultural zones were purposively selected, based on the preponderance of Shea butter marketing activities. This was followed by a purposive sampling of one local government area each from zone II and III based on the preponderance of Shea butter marketers. In the third stage, two (2) villages from each of the local government areas were purposively selected to sample out Shea butter marketers. The villages selected are: Sabon gida and Jimi in Bosso LGA (zone II) as well as Baburasa and Gada Olli in Borgu LGA (zone III). In the fourth stage, 41% of the total number of marketers in each village was sampled out to draw the actual sample size of one hundred and two (102 upper limit) of Shea butter marketers used for the study; this was drawn from the calculated sample size of one hundred and fifty three (153) using 1:2. The fifth stage involved a random selection of Shea butter marketers from two (2) major Shea markets in the two local government areas, The selected markets are: Sabon gida and Jimi Main Markets (Zone II) as well as Baburasa Central Market and Gada Olli Village Market (zone III). Shea traders were stratified into three categories (Rural buyers, wholesalers and Retailer). Marketers were randomly selected which consist of seven (7) rural buyers, seven (7) wholesalers and and six (6) retailers in Sabon gida village and 7 each for the three market participants in Jimi and 11, 10 and 10 market participant in Baburasa as well as 10 Shea butter marketers each for the three market participants in Gada Olli; these form the 20, 21, 31 and 30 respondents in the four chosen market areas of the sampled communities; representing 19.6%, 20.2%, 30.4% and 29.4% Shea butter marketers respectively. The one hundred and fifty three (153) sample size was calculated from the sample frame of two hundred and forty eight (248) at precision level of 5% (0.05). The summary of the population (sample frame) of Shea butter marketers, selected study locations and the distribution of (sample) sizes for the three categories of market participants are highlighted in (table1).

Table 1. Study Locations and Distribution of Sample Size

Agricultural Zones	LGAs	Villages	Sample Frame	Market Areas	Sample size (Shea butter marketers) (41% of SF)
II	Bosso	Sabon gida	49	Sabon gida (MM)	20(19.6%) (7, 7 & 6 for RB, WS, RT respectively)
		Jimi	52	Jimi (MM)	21(20.2%) (7 for each category as above)
III	Borgu	Baburasa	75	Baburasa (CM)	31(30.4%) (11, 10 & 10 for RB, WS, RT respectively)
		Gada Olli	72	Gada olli (VM)	30(29.4%) (10 for each category as above)
Total sample frame			248		102* (sample size actual)
Total sample size					153 (calculated)

***** Source**:** Niger State Export Promotion Council and GIZ: German International Cooperation 2011. *****Key**:** RB, WS, RT connote Rural buyer, Wholesaler and Retailer respectively, SF = Sample frame, MM= Main Market, CM= Central Market, VM= Village Market and LGA= local government area

Sample size (total) from the sample frame =

$$n = \frac{N}{1 + N(e^2)} = at\ 0.05\ pL\ e^2\ (Eric\ 2009\ ).\ldots\ldots\ldots\ldots\ldots(1)$$

Where:
n = sample size
N = population size
e = level of precision and PL denote = precision level.
Note: sample size of 102 was used as the upper limit using ratio 1:2 of the total sample frame.

3.3. Methods of Data Collection

The study was based on primary data elicited from the field survey using a structured questionnaire that was administered to Shea butter marketers. Data were collected on the following:

I. Socio-economic characteristics of the respondents such as age, marital status, level of education, major occupation, family size, sources of capital, membership of cooperative society, years of experience in marketing.

III. Marketing: Such as organization of Shea butter marketing, source of Shea butter, level of marketing, Shea butter market prices at various locations within the study area, costs implications, input prices and other related costs in marketing such as transfer cost which include terminal and transportation cost, storage costs, store renting and loss resulting from price decline, loading and off loading cost as well

as fixed cost, (fixed cost comprise the depreciation of all capital items use in marketing of Shea butter).

IV. Constraints: perception of marketers on problems associated with the marketing of Shea butter.

3.4. Analytical Techniques

Both descriptive and inferential statistics were employed to analyze the data from the field survey. The specific tools employed were: Marketing margin, marketing efficiency and Gini Coefficient/ Lorenz curve.

3.4.1. Descriptive Statistics

Descriptive statistics was used to describe the socio economic characteristics of respondents involved in the marketing of Shea butter (objective 1) and also to identify and describe the constraints associated with its marketing (objective 4). The tools used were: cross-tabulations, frequencies, graphs, ratios and percentages.

3.4.2. Gini Coefficient and Lorenz Curve

Gini Coefficient was employed to analyze the structure of Shea butter market (objective 2). The Gini coefficient is a measure of statistical dispersion most prominently used as a measure of inequality of wealth or product distribution. It gives indications about competitiveness of the markets. Gini coefficient has a ratio with values between 0 and 1 [35]. A low Gini coefficient indicates more equal distribution, while a high Gini coefficient indicates more unequal distribution. 0 (zero) corresponds to perfect equality and 1 (one) corresponds to perfect inequality [35]. The Gini coefficient summarizes the Lorenz curve which compares the cumulative shares of the product ordered from small range to the large shares of the product that would accrue to the sellers and the producers under perfect equality (the diagonal) and the total area under the line of perfect equality [36]. In graphical terms, the Gini index is the ratio of the area between the Lorenz curve and the line of perfect equality. The Gini coefficients of rural buyer, wholesaler and retailer were calculated from the formula below so to ascertain how optimum the structure of Shea market is, within the sampled communities.

$$G = \frac{\bar{d}}{2\bar{Y}} \qquad (2)$$

Where:

$$d = 2\sum_{1}^{k} N^{1}(X_1)\{1 - N^{1}(X_i + 1 - X_i)\} \qquad (3)$$

G = Gini coefficient

d = Coefficient of mean difference between each class (Rural buyer, Wholesaler &Retailer)

$N^1(X_i)$ = Cumulative relative frequency

K = Number of classes

$\bar{Y}$ = Mean of the total quantity of Shea butter traded by each class

$\bar{X}$ =Mean of the product traded by the i^{th} class

Note: The mean is the value arrived at by dividing the sum of observations by the total number of observations while frequency is used to denote the number of times a category or class occurs [37].

3.4.3. Marketing Margin (MM)

Marketing margin is a measure of the performance of the marketing system. Thus, marketing margin was employed to analyze difference in price of Shea products at different stages of time, form, place and possession as it moves from the primary producer to the ultimate consumer objective (3). It is expected that as Shea butter moves from the trader to the final consumer, the costs and profit level changes for each participant in the market (Rural buyer, Wholesalers and Retailers). A high marketing margin reflects a high level of profitability. It also reflects a high level of business stability. Marketing margin (MM) was calculated for each participant in the market (Rural buyer MM, Wholesalers MM and Retailers MM). The margins of the different participants were used to find and compare the price variation along the marketing chain. The general formula for computing marketing margin is:

$$\textit{Marketing margin (MM)} = \frac{\textit{Selling price} - \textit{Purchase price}}{\textit{Consumer price}} \times 100 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(4)$$

The consumer price was used as a common base (denominator) for all marketing margins to facilitate comparison among the participants. The gross marketing margin (GMM) is the summation of the different margins for all participants along the marketing chain. A wider variation between the MM of participants indicates a wide price variation along the chain while a participant with higher MM is said to have a larger share of the gross market margin, this will also indicate which of the market participants' (Rural buyer, Wholesaler and Retailers) marketing margin will reflect a high level of profitability and high level of business stability.

3.4.4. Marketing Efficiency (ME)

Marketing efficiency was used also to ascertain the performance of Shea butter markets, objective (3). Efficiency in the agricultural industry is the most frequent used measure of market performance. Marketing efficiency can be defined as the maximization of the ratio of output to input in marketing [22]. Efficient marketing optimizes the ratio between inputs and outputs. Marketing inputs here include the resources used in marketing Shea butter, such as: transport costs, loading and off-loading cost, commission, local government revenue, labour used, packaging, financing, and Shea butter cost. Whereas marketing output is the benefits or satisfaction created or the value added to the commodity as it passes through the marketing system. Efficiency can be expressed in physical or monetary terms, if monetary terms are used, the efficiency concept becomes a ratio of benefits to cost or if in physical, it becomes output to input used. In an attempt to examine the marketing efficiency of Shea butter in the study area, the following formula was adopted:

$$\textit{Marketing efficiency (ME)} = \frac{\textit{Value added by marketing}}{\textit{Cost of marketing services}} \times 100 \quad \ldots\ldots\ldots\ldots(5)$$

Value added by marketing for a participant along the marketing chain was calculated as the difference between the selling price and the purchase price along the marketing chain of Shea butter. When ME = 100%, it implies that the participant just recovered the cost incurred in carrying out the marketing services, ME > 100% implies that the participant covered the cost of marketing and made a margin above the 100%, while ME < 100% indicates that the participant is operating at a loss.

4. Results and Discussion

4.1. Socio-economic Characteristics of Shea Butter Marketers

The socio-economic characteristic of Shea butter marketers focuses on the following parameters: age, sex, marital status, educational background, household size, and years of experience in marketing.

4.1.1. Distribution of Respondents by Age, Gender and Marital Status

The result of the analysis in Table 2 shows the percentage distribution of respondents by age, gender and marital status within the sampled Shea butter marketing communities.

4.1.1.1. Age Distribution of Respondents

The study revealed that about 28.43% and 22.55% of Shea butter marketers were within the age range of 31-40 years and 41- 50 years respectively. The high percentage of respondents within the age range of 31 – 40 years agrees with the findings of Nwawe [38], who reported that more than (20%) of their sampled respondents were within the age range of 31-40 and 41- 50 years. This depicts that Shea butter marketers falls within an active age group for agricultural production. Youth within the age range of 11-20 and 21-30 years (11.76% and 13.73% respectively) were not actively involved in Shea butter marketing activities; this however could be attributed to rural urban drift by the youth in search of white collar jobs. The respondents within the age range of 51-60 and 61-70 years were also few in the marketing businesses of Shea butter. This could be attributed to the fact that the drudgery involve in Shea butter trading activities could be a limiting factor to the participation of aged people.

4.1.1.2. Gender Distribution of Respondents

The study also revealed that more than 90% of the respondents involve in butter trading were female, implying that women dominated the marketing of Shea butter in the sampled communities. This agrees with the findings of ([39]; [40]; [41]; [15]). They also reported high involvement of women in Shea butter processing and marketing. This could be attributed to the fact that Shea butter marketing is regarded as being domestic venture and considered as much more of women activities exclusively to women.

4.1.1.3. Marital Status of Respondents

The study also revealed that more than 70% of the sampled respondents were married. Only few of the respondents were single, widowed and divorced representing 10.78%, 4.90% and 5.88% respectively.

Table 2. Distribution of Respondents by Age, Gender and Marital Status

Variables	Frequency	Percentage (%)
Age		
11-20	12	11.76
21-30	14	13.73
31-40	29	28.43
41-50	23	22.55
51-60	18	17.65

61-70	6	5.88
Total	102	100
Gender:		
Male	8	7.84
Female	94	92.16
Total	102	100
Marital Status:		
Single	11	10.78
Married	80	78.43
Divorced	6	5.88
Widow	5	4.90
Total	102	100

Source: Field Survey, 2012.

4.1.2. Highest Educational Level, Household Size and Years of Respondent's Marketing Experience

The respondents' educational status, household size and years of marketing experience results are presented in Table 3.

4.1.2.1. Educational Level of Respondents

The study revealed that majority of the respondents (48%) had Quranic education while about 25% and 19% were found to have attained primary and secondary education respectively. This confirmed the study of [33] who reported that rural marketers are characterized by low level of educational background. The low literacy level could affect, to a great extent, the efficiency of marketing Shea butter in terms of cost minimization and value addition to make more profit.

4.1.2.2. Household Size of Respondents

The study also revealed that majority of the respondents (34%) and (32%) had household size of 1-5 and 6-10 people respectively. Marketing of Shea butter requires many hands, particularly the traditional marketing system that is the most prevalent in the studied communities. Thus, respondents with larger household size are more able to cope with the rigor involve in marketing of Shea butter due to the availability of cheap family labour while smaller household size will required more hired labour. About 18%, 12% and 4% respondents had household sizes of 11-15, 16-20 and 21-25 people respectively.

4.1.2.3. Years of Experience of Shea Butter Marketers

Table 4.2 depicts the years of experience of respondents in Shea butter marketing. The analysis showed that majority of the respondents (48.04%) and (46%) had between 1-10 and 11-20 years of experience in Shea butter marketing respectively. While only (4.9%) and (0.98%) of the respondents had marketing experience of 21-30 and 31- 40 years respectively. Years of experience could stand as an added advantage in terms of efficiency in converting marketing inputs into output and could as well be added advantage in strategizing market situations to make more profit.

Table 3. Highest Educational Level, Household Size and Years of Experience of Shea Butter Marketers

Variables	Frequency	Percentage (%)
Highest educational level		
Primary	26	25.49
Secondary	19	18.63
Quranic	49	48.04
None	8	7.84
Total	**102**	**100**
Household size		
1-5	35	34.31
6-10	33	32.35
11-15	18	17.65
16-20	12	11.76
21-25	4	3.92
Total	**102**	**100**
Years of experience of Shea butter marketers		
1-10	49	48.04
11-20	47	46.08
21-30	5	4.9
31-40	1	0.98
Total	**102**	**100**

Source: Field Survey, 2012.

4.2. Structure of Shea Butter Marketing

The structure and performance of a market are concepts used in assessing the level of competition and efficiency of the marketing system. This section assessed the nature of Shea butter marketing in the study area by analyzing the nature of competition and variability in Shea butter distribution as well as efficiency amongst all the three categories of market participants; (rural buyers, wholesalers and retailers). This section also measured the marketing margin of each category of Shea butter marketer as a determinant of the performance of Shea butter marketing system within the surveyed Shea communities. Thus;

4.2.1. Description of the Participants in Shea Butter Marketing and Their Role

4.2.1.1. Rural Buyer;

This group of middle men in Shea butter marketing system undertakes the initial task of assembling Shea product from processors or local rural markets. They represent 34.3% of the Shea marketers sampled within the study area. They purchase Shea butter in bulk from different market locations. Some are also processors, village shop keepers, and landlords, who buy and collect the product of other processors; they represent 13.5%, 18.7% and 2.1% respectively. The rural buyer could purchase on his own account from

various processors within and outside his community, this group of marketers represent (20.7%) of the sampled respondents or sometimes may act on commission to other rural buyers, (13.6 %). Rural buyers sometimes may furnish credit to the Shea nut processors; this group represents about 15.9% and they also arrange for the transport of Shea nuts to the processing point or to a central wholesaling rural markets, (18.4%) of the sampled respondents falls under this category. and sometimes may arrange for the packaging of Shea butter too. They play the role of relieving the processors of further marketing responsibilities. This category of marketers takes their Shea product majorly to major markets within the same community and to other rural markets outside the community.

4.2.1.2. Wholesalers;

This category of marketers play a central role in the marketing system of Shea butter, they serve as an assembling and purchasing centre in the rural areas or cities. They purchase the product from processors or rural buyers and sell to retailers or to other wholesalers in the domestic markets, these groups of marketers represent 33.3% of the marketers sampled within the study area. 7.8% of the sampled wholesalers agreed that a lot of capital is required to be able to have in stock large Shea products; some of them (10.8%) bear some of the marketing risks such as furnishing loans, arranging for transport, packaging and selling on credit to retailers.

4.2.1.3. Retailers;

This class of marketers buy and sell directly to consumers. The main function of retailers in Shea butter marketing is to obtain supplies and display them for sale in rural centre or village/town markets at the time, form and places convenient for the consumers. Usually they buy from one or more wholesaler, thus; 23.4% indicated buying from only one wholesaler while 9% buys from more than one wholesaler, sometimes they buy on credit and serve consumers who buy smaller quantities on day to day basis. Frequently retailers sort and repack the Shea butter to suit consumer's individual requirements by further chopping the butter into various sizes and repackaging them (using papers, leather, small rubber, cups, calabash etc) according to the consumer's need, these groups represent 32.4% of the sampled marketers. They sell on credit to consumers too.

4.2.2. Variability in Shea Butter Distribution amongst Market Participants

Tables 4, 5 and 6 describe the variability in Shea butter distribution amongst the sampled Shea marketers in the study area using Gini coefficient. The tables depict the cumulative share of Shea butter among the three participants in the market (rural buyer, wholesalers and retailer). The Gini coefficients of 0.077, 0.083 and 0.12 were obtained for rural buyers, wholesalers, and retailers respectively, and were found to be less than one. These values tend to indicate a high level of equality or a more equal distribution of Shea butter handled by the marketers. This is in line with the findings of [35] who in his research work also reported an equal distribution of agricultural product with Gini coefficients of 0.31, 0.21 and 0.17 for the three market participants sampled in Onitcha market in Anambra state. However, the equality in share of Shea butter handled by the three categories of participants in the market indicates that Shea product is evenly distributed within the sampled Shea communities and this featured a market that could be characterized as a monopolistic market with differentiated Shea butter sold as it was observed and the market was noticed to have no entry barrier to both the marketers and consumers. The Gini coefficient of 0.077 among the rural buyer showed the lowest degree of equality in Shea distribution. This signifies that there is more equality of Shea butter distribution among the rural buyer than amongst the wholesalers and retailers. Also there is more equal distribution of Shea butter among wholesalers with Gini coefficient of 0.083 than among retailers with Gini coefficient 0.12. The result also revealed that about

9% of the rural buyer controls 3% of Shea butter, while 6% of wholesaler controls 2% and 49% of retailers are in possession of 32% of Shea butter under the category of those that traded between 11-20kg of Shea butter (Tables 4, 5 and 6) respectively, The fact is that all participants have a fair share of the market for Shea butter, this portray that there is a fair competition among the markers as regards to Shea butter marketing in the study area.

Table 4. Distribution of Shea Butter Among Rural Buyers: Decomposed by Quantity Range in Kilogram's/month

Qty / Kg	$f(X_i)$	%	$N^1(X_i)$	$1-N^1(X_i)$	$\overline{X_i}$	$\sum f(\bar{x})$	$\overline{X}_{n+1} - \overline{X}_i$	%	$\overline{d}$
1-10	0	0	0	0	0	-	-	-	-
11-20	3	8.57	0.086	0.914	14.58	43.75	10.47	2.7155	0.823
21-30	5	14.29	0.143	0.857	25.05	125.25	18.49	7.828	2.27
31-40	8	22.88	0.229	0.771	43.54	348.35	3.02	21.62	0.533
41-50	9	25.71	0.257	0.743	46.56	419	7.315	26.01	1.40
51-60	4	11.43	0.114	0.886	53.875	215.5	11.125	13.376	1.124
61-70	1	2.86	0.029	0.71	65	65	10.71	4.035	0.205
71-80	3	8.57	0.086	0.914	75.17	225.5	9.21	13.997	0.724
81-90	2	5.71	0.057	0.943	84.38	168.75		10.474	
	35	**100**	**1**			**1611.1**		**100**	**7.079**
						46.03			

$G = \frac{\overline{d}}{2y} = 7.079/2\times46.03 = 7.079/92.06 =$ **0.077**

Source: Field Survey, 2012.

Table 5. Distribution of Shea Butter among Wholesalers: Decomposed by Quantity Range in Kilogram's/month

Qty / Kg	$f(X_i)$	%	$N^1(X_i)$	$1-N^1(X_i)$	$\overline{X_i}$	$\sum f(\bar{x})$	$\overline{X}_{n+1} - \overline{X}_i$	%	$\overline{d}$
11-20	2	5.88	0.0588	0.9412	15.5	31	9	2.149	0.50
21-30	7	20.59	0.2059	0.7941	24.50	171.5	10	11.887	1.64
31-40	10	29.41	0.2941	0.7059	34.50	345.0	12.06	23.912	2.504
41-50	9	26.47	0.2647	0.7353	46.56	419.04	8.86	29.044	1.725
51-60	3	8.83	0.0883	0.9117	55.42	166.26	8.83	11.523	0.671
61-70	1	2.94	0.0294	0.9706	63.75	63.75	0	4.418	0
71-80	0	o	0	o	0	0	86.25	0	0
81-90	1	2.94	0.0294	0.9706	86.25	86.25	0	5.978	0
151-160 1	2.94	0.0294	0.9706	160.0	160	160		11.0895	0
	34	**100**	**1**			**1442.8**		**100**	**7.04**
						42.44			

$G = \frac{\overline{d}}{2y} = 7.04/2\times42.44 = 7.04/84.88 =$ **0.083**

Source: Field Survey, 2012.

Table 6. Distribution of Shea Butter among Retailers: Decomposed by Quantity Range in Kilogram's/month

Qty / Kg	$f(X_i)$	%	$N^1(X_i)$	$1-N^1(X_i)$	$\overline{X_i}$	$\sum f(\bar{X})$	$\overline{X}_{m1}-\overline{X}_i$	%	$\overline{cd}$
1-10	16	48.49	0.4849	0.5151	8.425	134.8	5.393	31.46	1.35
11-20	14	42.42	0.4242	0.5758	13.818	193.45	11.932	45.15	2.90
21-30	2	6.06	0.0606	0.9394	25.750	51.0	-25.75	12.02	-1.47
31-40	0	0	0	0	0	0	48.75	0	0
41-50	1	3.03	0.0303	0.9697	48.75	48.75	0	11.38	0
	33	**100**	**1**			**428.5**		**100**	**2.78**
						12.9			

$$G = \frac{\overline{d}}{2y} = 2.78/2 \times 12.9 = 2.78/25.8 = \boxed{0.12}$$

Source: Field Survey, 2012.

The graphical representation of Gini coefficients for rural buyer, wholesaler and retailer within the study markets are depicted in Figure 1. The diagonal connecting points of (0,0) and (1,1) on the graph, depicts the 45^0 line or line of perfect equality. The graph showed the cumulative percentage of marketers against the cumulative percentage (%) of share of Shea butter among the participants; it confirmed the peak point amongst rural buyers that traded within the category of 41-50kg where 25% takes possession of 26% of Shea butter in the market, and 26% amongst wholesalers who traded within the category of 31-40kg controls 29% of the butter, the graph also established the highest point where 42% amongst retailers controls 45% of Shea butter (that is; those that traded within the class of 11-20kg of Shea butter). But generally there is no greater variability in Shea butter distribution amongst all the three categories of marketers. All the points indicating the cumulative percentage of marketers as against the cumulative share of Shea butter on the graph were uniformly distributed, that is, they are not far from the 45^0 line or line of perfect equality, consequently there is no greater divergence between the diagonal and the Lonrenze curve. This implies that all the points showing the level of Shea butter distribution amongst rural buyer, wholesaler and retailer are nearer to the line of perfect equality. These tend to suggest a fair competition among the marketers as regards to the quantity of Shea butter for sale. The uniformity at all the points of interceptions of the cumulative percentage (%) of sellers as against the cumulative percentage (%) of share of the product amongst all the market participants; (rural buyer, wholesalers and retailers) on the illustrated graph, portray a form of market that is not the pure monopoly type, since no single marketer occupy the business of Shea butter within the surveyed village market areas and taken into consideration also, the involvement of all the three categories of marketers in Shea butter trading within the sampled communities.

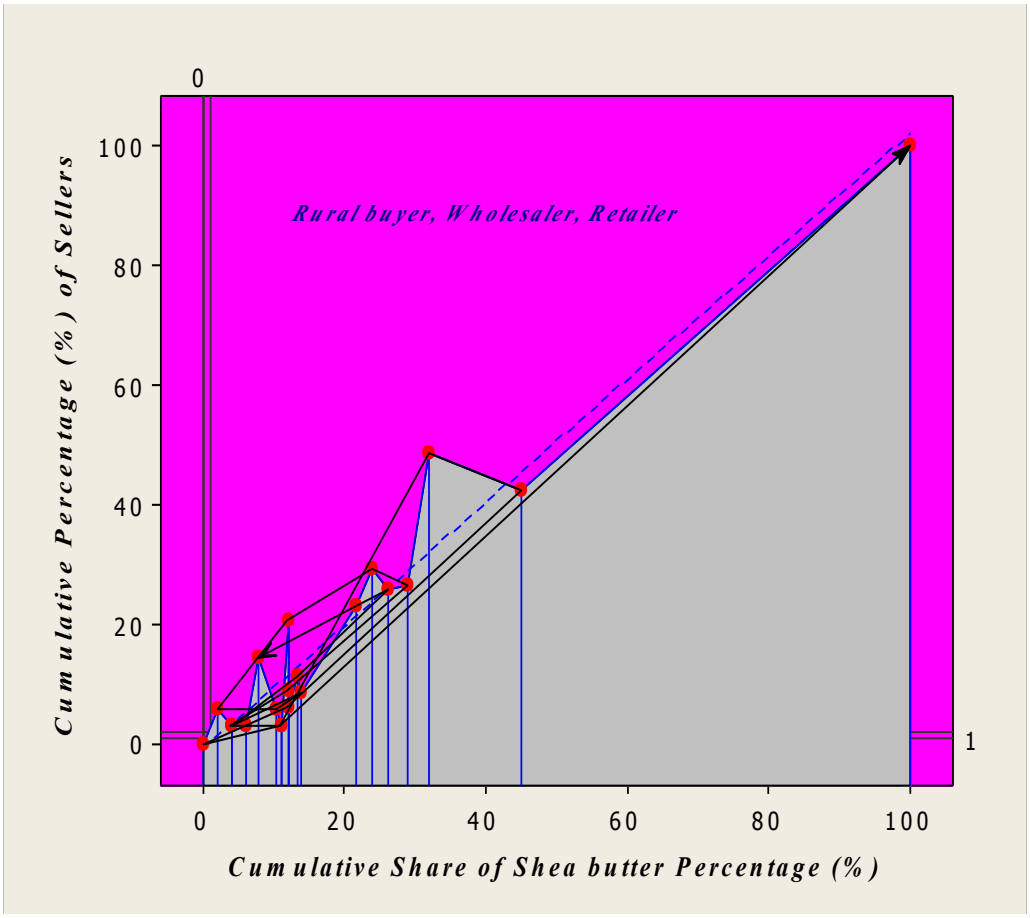

Figure 1. The Lorenze Curve for Rural Buyer, Wholesaler and Retailer
Source: Field Survey, 2012

4.3. Shea Butter Market Performance

4.3.1. Estimation of Marketing Margin

Marketing margin of the sampled Shea butter market participants was calculated as the ratio of the difference between selling price and purchase price of 1kg worth of Shea butter and the consumers' price multiplied by 100. The purchase price was calculated to be ₦3, 016.00, ₦3, 292,225 and ₦3, 668,575, the selling price to be ₦3, 559, 250, ₦3,809, 450 and ₦4,065 750 for rural buyer, wholesaler and retailer respectively and the consumer price was found to be ₦4, 065,750 for each of the market participants. The consumer price was used as a common base (denominator) for all marketing margins to facilitate comparison among the participants. The estimated marketing margins for the three categories of Shea butter market participants (rural buyer, wholesalers and retailer) are presented in Table 7. The marketing margins (MM) of rural buyer, wholesaler and retailer were 13.4%, 12.7% and 9.8% respectively, and the Gross Marketing Margin (GMM) was found to be 35.9%. This implies that there is a wide price variation along the marketing chain of Shea butter for rural than amongst wholesaler or retailer. The result also portrayed that rural buyer had larger share of the gross marketing margin, which implies that the market performance of Shea butter has a higher degree of business profitability and stability amongst the rural buyer within the study area than among wholesaler and retailer. Also there is a higher degree of business profitability and stability amongst wholesaler than amongst retailers.

Table 7. Estimated Marketing Margin of the Sampled Market Participants in the Study Area

	Rural buyers	Wholesalers	Retailers	Processors
Purchase price	3,016,000	3,292,225	3,668,575	100-GMM
Selling price	3,559,250	3,809,450	4,065,750	
Consumers price	4,065,750	4,065,750	4,065,750	
Marketing margin	**0.134(13.4%)**	**0.127(12.7%)**	**0.098(9.8%)**	**(64.1%)**
Gross marketing margin	**35.9%**			

Source: Field Survey, 2012.

4.3.2 Estimation of Marketing Efficiency

The marketing efficiency refers to the maximization of the ratio of output to the input used in marketing. The cost of inputs in marketing are the cost of providing marketing services while the output is the value added as the commodity passes through the marketing system. The total cost of inputs in marketing Shea butter include: packaging cost, transportation cost, storage cost, depreciation on capital items, and other costs; (cost of shop renting and LG revenue) and loading and offloading costs, which amounted to ₦68, 878.26, ₦67, 574.7 and ₦59, 506.5 for rural buyer, wholesaler and retailer respectively. The respective purchase and selling price for all the three market participants (rural buyer, wholesaler and retailer) was analyzed to ascertain the value added to Shea butter by marketing. The value added (VA) by marketing, which was therefore calculated as the difference between the selling price and the purchase price , was ₦543,250, ₦517,225 and ₦397,175 for rural buyer, wholesaler and retailer respectively. The marketing efficiency was 788%, 765%, and 667% for rural buyer, wholesaler and retailer respectively, (Table 8). The marketing efficiencies of all the sampled market participants were greater than 100 implying that there is certain degree of market efficiency in marketing Shea butter in the study area. Rural buyer had the highest marketing efficiency ratio which implies that these groups of market participants are more efficient in marketing of Shea butter than the wholesalers and retailer. The highest coefficient of marketing efficiency recorded by rural buyer depicts that there is certain degree of maximization of the ratio of output to the input used in marketing of this Shea butter among the rural buyer than amongst the wholesalers and retailer. The higher the marketing efficiency ratio is, the higher the marketing efficiency of the traded product [22]. It could however be deduced from the analysis that the marketing of Shea butter among rural buyer is more efficient than amongst wholesaler and retailer.

Table 8. Marketing Cost, Value Added and Marketing Efficiency of Shea Butter

Marketing costs	Rural buyer	Wholesaler	Retailer
Cost of transportation	22, 670	900	18, 890
LG revenue	1, 450	1, 550	1, 150
Packaging/repackaging	13, 340	15, 340	17, 960
Cost of storage	4,800	5,500	-

Depreciation on capital assets	8, 885	7, 046	10, 089
Loading/offloading cost	5, 300.76	4, 407.7	-
Total marketing cost (TMC)	68, 878.26	67,574.7	59,506.5
Purchase price (PP)	3, 016.000	3, 292,225	3, 668,575
Selling price (SP)	3, 559, 250	3, 809,450	4, 065,750
Value added (VA)	543, 250	517, 225	397, 175
Marketing efficiency (ME)	7.887(789%)	7.65(765%)	6.67(667%)

Source: Field Survey, 2012.

4.4 Constraints Associated with the Marketing of Shea Butter

The perceptions of respondents on the problems associated with the marketing of Shea butter within the study area are presented in Table 9 which disclosed that more than 80% of the Shea butter marketers' perceived low, unstable price and lack of standard measurement of Shea butter as some of the major problems militating against Shea butter marketing while 44.12% 39.22% and 15.69% of the respondents' signify in response to the problems of poor storage facility, transport and butter packaging respectively.

Table 9. Distribution of Respondents According to the Problems Associated with the Marketing of Shea Butter. N=102

Associated Problems	Frequency	Percentage (%)
Transportation problem	40	39.22
Low price	85	83.33
Unstable price	86	84.31
Lack of standard measurement	90	88.23
Poor Storage Facility	45	44.12
Poor access to Credit	37	36.27
Packaging problem (lack of homogeneous packaging items)	16	15.69
Discrimination from buyers	18	17.65
Low patronage	39	38.23

Sources: Computed from field survey data, 2012.

5. Summary, Conclusion and Recommendations

5.1. Summary

Shea is among the economic tree crops grown in central and northern Nigeria. The industry has the potentials to provide food, raw material, income and employment to many Nigerians. The demand for Shea butter has been on the increased yearly and this necessitate the study. Shea trees grow wild in the forest in large commercial quantity across all the agricultural zones of Niger state, Nigeria. The research work however assesses and analyzes the structure and performance of Shea butter market in Bosso and Borgu local government areas of Niger state, Nigeria. The study also identifies and described the major constraints associated with the marketing of Shea butter. Random samples of one hundred and two (102) marketers were selected from four communities in Bosso and Borgu local government area of Niger state. The communities are; Gada Olli and Baburasa in Borgu LGA as well as Sabongida and Jimi in Bosso LGA of Niger state, Nigeria. Data were collected from the respondents using structured questionnaire. Data collected were analyzed using both descriptive statistics, marketing margin, marketing efficiency, Gini Coefficient and Lorenz curve. The study revealed that more than 90% of the Shea butter traders were women. The result also revealed an equal distribution of Shea butter handled by the three categories of the market participants (rural buyer, wholesalers and retailer) with Gini coefficients values of 0.077, 0.083 and 0.12 respectively. The marketing margins (MM) of rural buyer, wholesaler and retailer were found to be 13.4%, 12.7% and 9.8%, respectively and the gross marketing margin (GMM) was reported to be 35.9%, while the value added (VA) by marketing were found to be ₦543, 250, ₦517, 225 and ₦397, 175 respectively. The marketing of Shea butter was found to be efficient with marketing efficiency (ME) ratio of > 100 for all the market participants**;** this was calculated to be 789%, 765%, and 667% for rural buyer, wholesaler and retailer respectively. This implies that some benefits are associated with the marketing of Shea butter; the total revenue of marketers was noted to have exceeded the total costs incurred during the marketing**.**

5.2. Conclusion

The findings of the study depict the Shea butter market structure, show how effective and efficient the marketing of Shea butter is within the sampled communities and portray the active involvement of all the market participants as well as unveiling the potential profitability of Shea butter marketing. The positive return reported by the study implies that all the participants were able to cover the costs incurred in carrying out the marketing services and made some profit; this also, is a clear indication that the marketing of Shea butter is efficient and has the potentials of increasing the rural income; this can induce Shea marketers to move into commercial production and marketing of the crop giving reliable information on how efficient and profitable the marketing of the crop is. The study also will serve as a guide for further research in to Shea value chain and will serve as a base line for policy makers to intervene in designing changes and formulating a more effective market policy for the growth and development of the Shea industry.

5.3. Recommendations

Based on the findings of this study, the following recommendations were made with a view to make the marketing of Shea butter more attractive socially and economically.

1. Credit facilities when given to the Shea butter marketers by government through micro finance banks and or by private organisations will boost the quantity and quality of Shea butter to meet up with the domestic consumption and for export, it will also improve the marketing efficiency of the traders to generate more income

through making more profit which will awaken other women and even men to go into marketing of Shea butter.

2. The provision of standard markets and facilities, stable market price, standard measurement, better packaging materials, storage facilities of the butter, product certification and quality control of the Shea products will not only bring out the enhanced marketable qualities of the butter or provide ease way of marketing of Shea products but will also assist the Shea butter marketers in the provision of substantial income to support their basic needs, which will not only alleviate poverty amongst Shea butter traders, but will also help government to intervene in designing changes and formulating a more effective market policy which requires research to provide information to improve the performance of Shea butter traditional marketing systems.

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