THE ROLES OF WOMEN IN GROUNDNUT VALUE CHAIN IN KANO STATE, NIGERIA

BY

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AUGUST, 2015

DECLARATION

I hereby declare that this dissertation titled **"The Roles of Women in Groundnut Value Chain in Kano State, Nigeria."**has been written by me and it is a record of my research work. No part of this work has been presented in any previous application for another degree or diploma at any institution. All citation and sources of information are duly acknowledged by means of references.

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CERTIFICATION

This dissertation titled 'T**he Roles of Women in Groundnut Value Chain in Kano State, Nigeria'**, by Nafisat ALIYU meets the regulations governing the award of the Degree of Master of Science, Ahmadu Bello University, Zaria, and is approved for its contribution to scientific knowledge and literary presentation.

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DEDICATION

This dissertationis dedicated to Almighty Allah (SWT) the most beneficent, the most merciful, the sovereign, the compassionate, the compeller, the greatest, the creator of all creatures, the fashioner, the subduer, the giver of all and the sustainer who createdthe heavens and the earth, and sends down water from the heaven with which he brings forth for our provision.

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ABSTRACT

The study examined the role of women in groundnut value chain in Kano State. The specific objectives were to describe the socioeconomic characteristics of key value chain actors; describe the roles engaged in by women value chain actors; estimate the cost and returns associate with value chain; determine the socioeconomic factors influencing profitability in groundnut value chain and finally describe the constraints encountered by women actors in groundnut value chain in the study area. Three local government areas were randomly selected from each of the three agricultural zones. Primary data were collected from 149 respondents with the aid of well structured questionnaire. Data collected were analyzed using descriptive statistics, net farm income and multinomial logit model. The result of the analysis revealed that majority (95%) of the actors fell within the age range of 41-60 years with an average age of 46 years, 85% had household size of 1-10 persons with an average of 6 persons, and 55% have western formal education and were married. Majority (93%) of women in groundnut value chain did not participate in any cooperative society while about 89% used their personal savings to finance their various activities in groundnut value chain. Groundnut production, processing and marketing in the study area were highly profitable with returns of 2.00, 2.24 and 2.83 respectively for every ₦1 invested. Age and cooperative association were the only socioeconomic factors influencing profitability of the actors in the study. However, there were reported challenges and constraints in the groundnut value chain. The major constraints faced by the input dealers, farmers, processors and marketers in the study area were inadequate capital (37%), pest and disease infestation (32%), high cost of product (30%) and high cost of transportation (33%) respectively. The study therefore, recommends policies that will encourage groundnut value chain actors in the study area. They should also be provided with simple but efficient equipment at affordable cost. Research activities in developing disease and pest resistant varieties, high yielding varieties and high quality products should be supported by the government and non-governmental organization.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Agriculture in Nigeria is a major branch of the economy, providing employment for 70% of the population. The sector is being transformed by commercialization at the small, medium and large-scale enterprise levels. Major crops include beans, sesame, cashew nuts, cassava, cocoa, beans, groundnuts, gum arabic, kola nut, maize (corn), melon, millet, palm kernels, palm oil, plantains, rice, rubber, sorghum, soybeans and yams (Olomola, 2007). Out of these various crops, women are highly involved in production of some and processing of others.

Specifically, it is important to know the different roles that women play in the value chain, the potential impact of upgrading strategies on gender equity, and the impact that increased sales might have on women's control over decision-making for crop production and crop income at the household level. Information on these questions can help stakeholders design the commercialization process to reduce potential negative impacts on gender equity and ensure that the development of new value chains does not disempowering women (International Crops Research Institute for the Semi-Arid Tropics (lCRISAT, 2014).

Groundnut (*Arachis hypogaea L*.) is from the Papilionaceae family. Groundnut is grown on about 23.95 million ha worldwide with the total production of 36.45 million tons and an average yield of 1520 kg/ha in 2009 (FAOSTAT, 2014). China, India, Nigeria, USA and Myanmar are the major groundnut producers globally. Developing countries in Asia, Africa and South America account for about 97% of world groundnut area and 95% of total production. Production is concentrated in Asia (50% of global area and 64% of global production) and Africa (46% of global area and 28% of global

production), where the crop is grown mostly by smallholder farmers under rainfed conditions with limited purchased inputs (lCRISAT, 2014).

Understanding the performance of the agricultural enterprises through the value chain frame work has been identified as key in improving the agriculture sector (Weber, 2009). In value chains of commodities, the full ranges of activities which are required to bring a product or service from conception, through the different phases of production to the final consumer, and final disposal after use are studied. Value chain analysis helps in understanding business- business relationships which connect the chain, mechanisms for increasing efficiency and ways to enable the business to increase productivity and add value. The value chain of a commodity does not only illustrate the vertical linkages but the horizontal linkages as well and are usually more links in the chain than often illustrated. Most often, intermediary players in the chain may feed into a number of different value chains (lCRISAT, 2014).

1.2 Problem Statement

Many studies on value chains of important crops have been done but often the approaches are too simplistic, and leave a lot of gaps in the analysis (Webber, 2009). Most value chain studies focus excessively on cost efficiency or the breakdown of cost components. Some studies end at describing the chain without adding any value or giving any suggestions for the opportunities to upgrade the chain to benefit all participants including women in the chain. The environment in which the value chain operates is usually not given the required attention. In limited instances, analysis focuses on improvements within the given value chain, but does not go in detail to explain the role women plays in the value chain activities.

International Fund for Agricultural Development (IFAD) (2007) observed that although female farmers are primary partners in the world's food production and security, they are "frequently underestimated and overlooked in development strategies". United Nation (2010) there is also limited documented empirical evidence on activities undertaken by women in groundnut value addition. An immediate challenge that arises for undertaking such a study is unavailability of sufficient information on groundnut vale chain in Nigeria. Although a study on groundnut value chain in Nigeria have been undertaken by several researchers (such as Ilu and Damisa, 2007; Kamau, 2008 and Wanyama *et al*. 2013), there still exists a research gap in the understanding of activities of women in groundnut value chain in Nigeria.

Despite the importance of women in groundnut value chain in terms of employment and income generation and poverty reduction, several constraints are associated with its production along the value chain. This study therefore attempted to bridge the research gap by finding out the role of women in groundnut value chains as well as their associated problems. The following research questions were addressed:

i. What are the socio-economic characteristics of women in groundnut value chain?
ii. What are the roles engaged in by women along the value chain?
iii. What are the cost and return associated with specific roles along the value chain?
iv. What are the socioeconomic factors influencing the profitability of specific roles in value chain?
v. What are the constraints encountered by women actors in the groundnut value chain?

1.3 Objective of the Study

The broad objective of the study was to examine the role of women in groundnut value chain in Kano of Nigeria. The specific objectives were to:

i. describe the socio-economic characteristics of women in groundnut value chain;
ii. describe the roles engaged in by women along value chain;
iii. estimate the costs and return associated with specific roles along the value chain;
iv. determine the socioeconomic factors influencing profitability of specific roles in value chain and
v. describe the constraints encountered by women actors in groundnut value chain.

1.4 Justification of the Study

The value chain approach is a strategic network of independent organizations and businesses, which recognize their mutual need for one another, to work together to identify strategic objectives and to share the associated risks and benefits, and will invest time, energy and resources to make the relationship work (Amanor-Boadu, 1999). The role of women in agricultural commodity value chains is undeniable and therefore, there is the need to study the value chain activities of women and this is even more necessitated by the agricultural transformation agenda of Nigeria which is anchored on value addition to agricultural commodities. This study is therefore necessary to bridge the knowledge gap on the vital activities of women along the groundnut value chain. The findings of this study will serve as important information that will guide policy makers in understanding women value chain actors in groundnut value chain in the study area. The findings of this study will also benefit IAR and other research institutes in understanding the appropriate groundnut production and processing activities that are needed for women to enhance the growth of the groundnut

value chain. The outcome of the study will also be important as a reference material to prospective researchers that will be working on other aspects of the groundnut value chain in Nigeria such as the value additions by men in the groundnut value chain.

In order to credibly evaluate the women activities and its potential benefits in groundnut value chain, there is real need to undertake survey on evaluating the activities of women in Groundnut value chain. The information collected can also serve as useful baseline data for future impact evaluation of ATA strategy and in informing on the status of the Women and how they keyed in to the Agricultural transformation agenda.

CHAPTER TWO

LITERATURE REVIEW

2.1 Origin of Groundnut in Nigeria

Groundnut *(Arachis hypogea L*) also known as peanut is one of the world's principal oil seed crop. Groundnut originated from South America, but is now widely cultivated throughout the tropical, sub-tropical, and the warm temperate areas. Groundnut is put to many uses. It is an economic crop the haulms are important folder for livestock, especially, sheep and goat and in particular ram. The plant through its biological activities nitrogen fixation is an important soil fertility conserver. The nuts are consumed roasted, boiled or as confectionary, snack nuts, peanut butter or in cookies. The nut is crushed to produce oil which is principally used for cooking. But it is also used for other industrial purposes such as pharmaceuticals as carrier, cosmetic. It is also used for the production of margarine the by product, meal (cake) is used for both human and livestock consumption (Ilu and Damisa, 2007).

Groundnut in Nigeria, as in other major producing areas is largely a small holder crop, grown under rainfall conditions in semi-avid areas. Although, it is grown in commercial farm in America and Europe, the developing countries, with their small scale production, account for over 95 and 94 percent of world groundnut area and production respectively (Nigam*et al.*, 1999). Production is concentrated in Asia and Africa account for 60 to 70 percent of world groundnut area and product respectively. India (35% area, 28% production) and cline (17% area and 34% production) are the major producers in Asia. Africa accounts for 35 percent of the global area but only 21 percent of the production. The major producers in Africa are Senegal, Nigeria and Sudan. The other major world producers are USA and Argentina (Ilu and Damisa, 2007).

Groundnut requires a high sandy loam soil, and semi-arid conditions. Optimal growing time is five months of warm weather, with an annual rainfall of 20 to 40 inches or the equivalent in irrigation water. Groundnut production is dependent on land preparation, seed extraction, seeding and cultivation, harvesting, stripping and sun-drying. This process is labor incentives which can affect the productivity and quality of nuts produced. However, with the introduction of groundnut of groundnut projects and simple technologies production yields can be increased (Amber and Katrina, 2004).

Groundnut is a staple food in many developing countries. Also called peanuts, groundnut is a proteins rich tuber that grows well in semi-arid region there are two main types of groundnut: the American groundnut (*Arachis hypygaea*) and the African groundnut, the Bambaranut (*vocandzeia subterranean*). Both are grown in Western Africa as a protein source. Groundnut also contains sufficient quantities of carbohydrates and fat. After drying and roasting the groundnuts. It can be used to make flour, soup, porridge and milk. Groundnut is often grown by small farm holders and is considerable a woman's crop in Western Africa(Amber and Katrina, 2004)..

2.2 Production of groundnut in Nigeria

The production of groundnut in Nigeria started around 1912. This was in response to the high world prices; Nigeria was prominent among world producers since then. Nigeria becomes the largest producer and exporter of groundnut in the 60s with a production of 500,000 metric tons a year (Purseglove, 1968). Nigeria reached a peak production of 1.6 million metric tons in 1973. Production fell by almost half the 1973 figure in less than a decade, due to a combination of two important factors. First the drought of 1974/75 growing season, which brought with aphid infestation, wiped move than 750,000 hectares of groundnut fields, this brought tremendous loss to both farmers and

merchants. Secondly is the oil boom in Nigeria about the same time (Ntare, *et al.*, 2005). The loss from groundnut and the availability of oil money transformed groundnut merchants to government contractors. Government on its part equally shifted its attention from agriculture as a whole to the oil industry (Ilu and Damisa, 2007).

Farmers adopted different strategies to cope with the situation of dismantling of commodity marketing boards. Including groundnut by Structural Adjustment Programme (SAP) and the structure was taken over by private sectors. One of the strategies was shifting from groundnut to other crops. This had major effect on the production of the crop. But relevant evidence showed that groundnut production in Nigeria is picking up again (Ilu and Damisa, 2007).

Nigeria was at one time, the leading exporter of groundnut in the world. However due to production and marketing problems, it lost out and is currently not listed among the world major exporter of groundnut. Nigeria only exported it's groundnut to neighboring West Africa countries (Ilu and Damisa, 2007).

2.3 Women participation in groundnut production

The groundnut is considered a women's crop in Africa it was originally grown by women to supplement their families diet with protein. However, groundnut production can also be a way for women to earn cash income and participate in the economy consequently, increasing women's empowerment. Women value groundnut harvest for many reason, including: generate income to send children to school, provide high energy and protein food source for their children, oil for cooking and high quality feed for cattle (Amber and Katrina, 2004). Prospects of female laborer in developing countries. Production technologies for groundnut farming created a positive impact on

yields and income and helped create an informal farmer to farmer seed market (Amber and Katrina, 2004).

According to International Crop Research Institute for Semi-Arid Tropics ICRISAT, (2001) the groundnut is mainly grown by poor small holder farmers (mainly women). Groundnut production gives an opportunity for these women to generate additional cash income from oil. Given equal access to resources and human development capita, women farmers can achieve yield equal or exceed those of men. On the other hand, Kowal and Kassam (1973) found that several factors contribute to declining groundnut production. Among the important contributing factors are drought and disease epidemics.

2.4 Groundnut Value Chain

Nigeria adopted the value chain approach to address components of the entire agriculture value chain for crops, livestock (including poultry) and fisheries. The agricultural value chain is defined as the full sequences of activities or functions required to bring a product from concept, through the intermediary steps of production, transformation, marketing, and delivery to the final consumers. The federal government through its Ministries, Departments and Agencies (MDAS) sets the direction, while the organized private sector as well as the state local Government derives execution.

Nigeria is among the few Africa countries with functioning commodity exchange, The Abuja Securities and commodity exchange (ASCE). It is wholly owned by the ministry of commerce, established in 1998 by the exchange, it was expected to help farmers, processors and traders in agricultural commodities to manage production and marketing risk in the farm sector and thereby catalyze commercialization and growth in

agriculture. However, expectation is yet to be fulfilled as the ASCE has struggled to attract significant volumes of trade in agricultural and non-agricultural commodities, between July 2006 and end of the first quarter of 2009, the ASCE traded a total value of maize, millet and groundnut of 9.1% of the total traded. The major buyers of the commodities were industrial end-user such as oil mills ltd, (oilseed preservers) ground cereal and other processing companies (ASCE, 2012).

However, total expressed demand (in the form of bids) for the major commodities from these buyers was over 7,000mt in 2007 and about 10,000mt in 2008. In 2007, only 250% of their demand was met while the exchange recorded no significant trade in 2008. The volume traded in 2006 was 986mt and rose to 1,877mt in 2007, there was no recorded trade in 2008 and by the end of the first quarter of 2009 only 11mt of groundnut had been traded (ASCE, 2012).

2.4.1 Production

Groundnut requires sunshine, a warm growing of 120 sandy soils, dark soil tend to stain the shells. Traditionally, production has been in the southern USA and in the warm season areas of South America, Africa, and Asia. After groundnut (peanuts) is harvested, the plants are used as forage for livestock.

2.4.2 Storage

The storage of groundnut starts right from harvesting. Immediately after harvesting, the weather is dry; groundnut could be dried naturally in the field. When it is wet, the crop should be picked within three days of harvesting after picking the pods should be sun dried on mats or sacks. Proper drying after harvest helps to reduce afflatoxin in groundnut (Hadiza, 2008).

Afflotoxin is a toxic chemical produced in groundnut by mould. Therefore before storage can take place after harvesting decortications, winnowing and cleaning in order to remove the immature kennel, those affected by afflatoxin, damage ones, then storage or utilization of groundnut seeds in to bags take place (Hadiza, 2008).

2.4.3 Processing

In the Northern part of Nigeria, processing of groundnut at small and medium scale levels is an important economic activity for women in many villages and nut after harvesting and shelling involves a series of operation. A locally identified variety with high oil content is Kampala with red and white color stripe. It is during kneading that the main extraction of oil take place the process is the most difficult task in the entire processing activities of the groundnut in to oil (Nalumansi, and Kaul, 1992; Suleiman, 2002).

Traditionally, in Nigeria the tools used for oil extraction are a wooden mortar and a pestle with one person as source of power most of the time during the operation. A lot of time and energy are expended using this method and this limits the capacity of women processors to very small scale (Nalumansi and Kaul, 1992).

Groundnut processing is basically the transformation of the primary agricultural products (raw groundnut) into other finished commodities like groundnut oil, cake and animal feed among others. Processing of groundnut perhaps the best area an investor can engage in with maximum utilization of the product. The milling of the product would yield edible oil which can be refined to get vegetable oil and groundnut cake which is a valuable input in the preparation of animal feed and as such can be sold to animal feed millers. Therefore, groundnut processing can lead to reduction in food wastage, enhanced food security, improvement in livelihood of low income groups and empowerment of women especially in Nigeria where processing of groundnuts into

various products is mostly done by women either for home or commercial consumption (Ibrahim *et.al.*, 2005, Practical Action, 2010).

2.4.4 Marketing

Market Sellers: These operate at the rural market level. They comprise of mainly farmers themselves who take their harvests to the market for sale. A small portion of market sellers are not groundnut producers but concentrate on buying produce from farmers and selling to local consumers in the rural markets (ICRISAT, 2014). Market sellers operate all year round unlike farmers who are in business only two times a year. The groundnut product is either in shelled form or unshelled form to retailers who do the shelling themselves. They do not have stores and sell their produce in the open-air markets. They have a very limited source of market information especially for situations in distant markets. Their adjustment of prices depends on the local demand, number of competitors and the amounts being delivered to them by the farmers (ICRISAT 2014).

Agents: The agents (rural traders and town traders) serve as a link between farmers and buyers. Most times these agents are farmers or members of the farming community. They normally guide buyers who are not familiar with the location of different farmers. Transport of produce and market information delivery are the major services they provide in the value chain. They sometimes buy farmers' produce and store it in town centres for buyers (urban wholesalers) from the urban centres to access it easily. They are not necessarily brokers because they work under the directives of urban wholesaler buyers and producers. In most cases, urban sellers advance them with the money to purchase produce from famers. (Sikuku and Ogemah; 2005).

2.4.5 Consumption

Groundnuts are used for oil extraction, food and as an ingredient in confecting product. Following extraction, the residual cake is processed largely for animal feed, but is also use for end users of groundnut vary among the developed and developing countries (Trade invest Nigeria, 2011).

Groundnuts also have a variety of industrial end uses paint, varnish, lubricating oil, leather dressings, furniture polish insecticides and nitroglycerin in are made from groundnut oil soap is made from saponified oil, and many cosmetics contain groundnut oil and its derivatives. The protein portion of the oil is used in the manufacturing of some textile fibers. Groundnut shells are used in the manufacture of plastic, wall board, abrasives, fuel, cellulose (used in rayon and paper) and mucilage (glue).(Trade invest Nigeria, 2011).

Groundnuts provide a vital source of cash income and nutritional, high protein food which could prevent child malnutrition. Groundnuts has many important nutrients and useful in the treatment of hemophilia. Also, groundnuts can care stomatitis, prevent diarrhea, and beneficial for growing children, pregnant mothers and nursing mothers (Amber and Katrina, 2004).

Groundnut recipes

Groundnut stew (taushe)

Kunu Gyada (groundnut pap)

Roasted groundnut with salt

Boiled groundnut

Groundnut cookies

2.5 Conceptual framework of value chain

The term *Commodity Chain Analysis* is used to refer to the overall group of economic agents (or the relevant activities of those agents) that contribute directly to the determination of a final product. Thus the chain encompasses the complete sequence of operations which, starting from the raw material, or an intermediate product, finishes downstream, after several stages of transformation or increases in value, at one or several final products at the level of the consumer. Commodity chain analysis can be used to analyze policies in two important ways: it is a tool for setting out the complete financial accounts of the various agents along the length of the chain, it is an accounting framework allowing for the systematic recording of a large part of the information necessary for a proper economic analysis thus extending financial accounting analysis. FAO, (2006) describes the value chain as all the activities that take place in a business and relates them to an analysis of the competitive strength of the business. Value Chain Analysis is one way of identifying which activities are best undertaken by a business and which are best provided by others ("out sourced"). What activities a business undertakes is directly linked to achieving competitive advantage. FAO further termed it with three different names as 'Commodity Chain Analysis', 'Global Commodity Chain'; 'Functional Analysis and Flow Charts'.

Nonetheless, the primary focus of the Global Commodity Chain (GCC) is to analyze the international trading system and the increasing economic integration of international production and marketing chains. Introduced into the literature by Gereffi during the mid-1990s, the GCC concept was developed within the framework of an analysis of the political economy of development and underdevelopment, originally derived from world systems' theory and dependency theory. It was developed primarily to analyze the impact of globalization on industrial commodity chains (FAO, 2006).

While Commodity Chain Analysis (CCA) was developed by French Research Institute as a neutral, value-free technique applied to analyzing existing marketing chains for agricultural commodities assessing how public policies, investments and institutions affect local production systems. For the purpose of analyzing policies, a chain is composed of a series of operations or transformations, a set of agents and a system of markets (in terms of both physical flows and their monetary equivalents), as well as the behavior of agents as guided by their economic interests. It consists of a quantitative analysis of inputs and outputs, prices and value added along a commodity chain through agent accounts. Global commodity chains provide an emphasis on internal government structure of supply and demand which distinguished between producer-driven and buyer-driven chains and on the role of diverse lead firms in setting up global production and sourcing systems (Gereffi and Korzeniewicz, 1994).

Global value chains studies which highlighted the relative value of those activities that are required to bring a product or service from conception through the different phases of production (involving a combination of physical transformation and inputs of various producer services), delivery to final customers and final disposal after use. Current discussions of value chains analysis have their origins in two rather distinct traditions; the Anglophone Global Commodity Chain (GCC) analysis developed by Gary G. and others within the framework of an analysis of the political economy of development and underdevelopment, originally derived from world systems theory and dependency theory. The Francophone 'filiere' tradition developed by French researchers at the Institute National de la Recherché Agronomique (INRA) and the Centre Internationale en Recherché Agronomique pour le Development (CIRAD)(Gereffi and Humphrey, 2005).

Commodity chain analysis as a tool to build from agent accounts towards sector value added. The dominant idea behind the economic analysis of commodity chains is to lay out the overall activities of all the participants, or agents, who contribute to the production and/or transformation of a given commodity. In order to achieve this, the economist identifies the flows which link the agents together through identifying and outline of the chain, the position of the various agents within it, developing the economic accounts corresponding to the activities of the agents involved in the chain.

Brent, (2010) clarifies the value chain as a very useful conceptual tool when trying to understand the factors that impact the long-term profitability of business and when developing a successful strategic plan for your business. The value chain can be thought of as a set of activities, services, and products that lead to a product or service that reaches the final consumer.

In his opinion the value chain can help you answer questions regarding:

a. How the products you produce reach the final consumer.
b. The structure (economic relationships) between players in the chain.
c. How this structure is likely to change over time.
d. The key threats to the entire value chain.
e. The key determinants of your share of the profits created by your chain.

The value chain is a concept from business management that was first described and popularized by Michael Porter in his 1985 best seller, competitive Advantage. Creating and sustaining superior performance (Porter, 1996). The idea of value chain is quite intuitive the term value chain refers to the full range of activities that are required to bring a product (or a service) from concept through the different phases of production to delivery to final consumers and disposal after use (Kiplinsky, 1999). A value chain

exists when all of the actors in the chain operate in a way that maximizes the generation of value along the chain the value chain analysis describes the activities that take place in business and relates them to an analysis of the competitive strange of the business (FAO, 2006).

However, value chain has proven particularly useful for the identification and formulation of project as well as in the development of strategies for improved agricultural and rural development (Bammann, 2007).

There are three main research streams n the value chain literature: the filiere approach, the conceptual frame work elaborated by Porter (1985) and the global approach proposed by Kiplinsky (1999), Gereffi (1994; 1999; 2003) and Gereffi, and Korzeniewicz (1994).

2.5.1 The Commodity Chain Analysis or "*Filiere* Approach"

Francophone *filiere* also known as commodity chain Analysis (CCA) has its origin in technocratic agricultural research while the *filiere* approach is seen to belong to a neutral and purely empirical category. The application of the *filiere* approach to agriculture in developing countries was heavily influenced by the needs of the colonial and post-colonial French state that has an agricultural development policy that was commodity centered and literature this required a matching analytical framework. The *Filiere* analysis is therefore applied to agricultural commodities and without any specific frame.

Filiere approach was built on various schools of thoughts that differ in theory and research questions. It's also built on different theories and methodologies that include system analysis, industrial organization, industrial economics, management, Marxist economics, as well as, various accounting techniques, which all have roots in neo-

classical welfare analysis (Kydd, *et al*, 1996). *Filiere* approach were initially applied to local production systems and consumption, there by overtaking processing and international trade, until the 1980s.

The *filiere* approach has recently begun to deal more directly with issues of trade and marketing in order to discuss the working of commodity chains with an increasing liberalized context. A striking feature of the filiere approach is that it has been used extensively to justify the maintenance of intervention structure (commodity/Boards) at a time the World Bank and GCC advocate for the dismantling of equivalent structures.

The *filiere* approach is considered the most appropriate approach for the study of the groundnut commodity chain in view of the nature of the groundnut industry. The disbanding of the groundnut marketing board had mixed result to the industry. There is no doubt that a number of merchant had entered the market, but this has not improved the price received by farmers. The oil millers at the same time are complaining bitterly of the cost of groundnut, their capital is tied to machinery and other infrastructure; they lack the required funds to purchase and stock groundnut during high season. They have to sell their produce before they can buy raw materials. In addition to that processors also face high competition from imported vegetable oil importation (FMARD, 2004) was intended to reduce the competition.

2.5.2 The global approach

The Anglophone Global commodity chain (GCC) analysis has been developed primarily for industrial commodity chains. GCC is built on unities theoretical frame work. Both *filiere* and global approach cover the same general field but they are

however separated not only by geography and language but also in their political and theoretical grounding. The modification and application of value chain ideas to development issues become more formalized in the mid-to-late-1990s, particularly in the global commodity chain (GCC) approach of Gereffi and Korzeniewicz (1994). GCC and subsequent approaches focused predominantly on value network in terms of looking at the relationships and linkages between firms, rather than solely at value creating functions within a firm.

2.5.3 Porters framework

The term "value chain" was first used by porter (1980). Porter designed the "value chain" as a representation of a firms value adding activities based on its pricing strategy and cost structure. Porter's approach highlights actual and potential areas of competitive advantages for the firm porter augured that individual firm each have their own value chains that are embedded in value networks (or "value system" in the terminology of porter), each of which have different function within an industry or sector the influence other actors in the network. The salience of porter's discussion was to highlight the interdependence and linkage between vertically arranged actors in the creation of value for a firm. In porters framework the concept of value chain therefore has a strict business application. Value chain analysis mainly aims at supporting management decision and executive strategies.

2.6 Empirical Review in Value Chain Studies

Many empirical studies have been conducted on different aspects and nodes of the groundnut value chain. Some have focused on production, such as Okello, Birumal and Deom (2010), others on marketing (Byemaro, 2010), processing and utilization while others have looked at the entire value chain (such as USAID, 2008; Meyer, 2007;

Mwesige, 2009, Olowe, Adeyemo and Adeniregun, 2009). The different studies have different schematic presentation of groundnut value chain. (Sikuku and Ogemah, 2005).

Okello *et al*. (2010), Mohamoud, Osman, Nalyongo, Wakjira and David, (1991) stated that the groundnut production was part of the Northern and Eastern Uganda people's culture. Production is usually done in pure stands under subsistence farming with popular traditional varieties of red Valencia type which is of a very mixed nature consisting of large seeded 'manyema group' e.g. Roxo and small seeded group e.g. Red Beauty (Okello *et al*., 2010). Production has been greatly affected by rosette disease which attacks the crop in the field (Okello *et al*, 2010). Other diseases include early leaf spot and late leaf spot. Pests such as aphids also attack groundnuts in the field. This has partly contributed to the decline in groundnut production over the last two decades according to (Masette and Cadia, 2007). To reverse this declining trend, new and improved varieties are being introduced to increase the cash value of groundnuts (Sikuku and Ogema, 2005).

ICRISAT (2014) reported that groundnut is grown on about 23.95 million per hectare worldwide with the total production of 36.45 million tonnes and an average yield of 1520 kg/ha in 2009 Developing countries in Asia, Africa and South America account for about 97% of world groundnut area and 95% of total production. It is one of the important legumes grown in Uganda, ranking second after beans. Its production is most common in Northern, Eastern and Southern parts of the country with higher volumes being produced in the Eastern part compared to the other two. The value chain for groundnuts in Uganda consist of many actors (individuals and institutions) including input suppliers and seed dealers, producers, market sellers, rural traders, urban traders, processors, exporters and consumers.

Wanyama, Mshenga, Orr, Christie and Simtowe (2013). observed that groundnut farmers in Rongo and Ndhiwa Districts of Kenya undertake only one form of value addition, shelling. Although they appreciated the higher profitability associated with other forms of value addition like processing, inadequate capital to purchase processing equipment was a major constraint. Their findings showed that value addition raises household per capita income by Kshs.88 per day. Male headed households recorded higher levels of income compared to female headed households which indicated that potential exists in peanut value addition as a possibility to raise farmers' household incomes.

CHAPTER THREE

METHODOLOGY

3.1 Description of the Study Area

The study was conducted in Kano state. According to the 2006 census Kano state has a total population 9, 401, 288 in 2006 (NPC, 2006), with a projected population of 11,

206, 335 people in 2012 at a growth rate of 3.2 percent per annum. It is the most populated State in Nigeria. Kano state lies between latitude 80^0 30' to 90^0 40E and 11^0 30' to $12^0$03'N of the equator. Kano state is made up of 44 local Government areas with total land area of 20,760 square kilometers (km^2). It is also occupied by Hausas and Fulani's. Kano is located at 481 meters (or about 1580 feet) above sea level, the region features savanna vegetation and a hot semi-arid climate. Kano seen on average of 873 mm of precipitation per year, the balk of which falls from June through September, Kano is typically very hot throughout the year, through from December through February the city is cooler, with average low temperatures ranging from 11^0c to 14^0c (www.climatetemp.info) Kano state is a show case of agriculture, self-reliance and resource management. Kano state today is the most irrigated state in the country with more than 3 million hectares of cultivated land. Crops mostly grown in the state include groundnut, maize, sorghum, millet, rice and cowpea among others (Nigerian Exchange Commission Limited, 2009).

3.2 Sampling procedure and Sample Size

Multi-stage sampling technique was employed in selecting the respondents in the study area. The first stage involved the purposive identification of three Agricultural zones in Kano state based on their involvement in groundnut value chain activities. In the second stage three Local Government Areas were selected purposively on the basis of being the most prominent groundnut producing areas in the three (3) agricultural zones in the state. In the third stage five actors (input dealers, farmers/producers, processors. Marketers and consumers) in groundnut value chain were identified and considered from which 10% of the sample frames was randomly selected using simple random sampling technique to obtain a total of 153 respondents.

Table 2: Sampling Procedure and Sample Size

Zones	LGAs	Input Dealers		Farmers		processors		marketers		consumers		Total
		SF	SS	SF	SS	SF	SS	SF	SS	SF	SS	
Danbata	Makoda	30	3	50	5	30	3	20	2	30	3	16
	Danbata	10	1	40	4	70	7	40	4	90	9	25
	Ngogo	30	3	50	5	10	1	20	2	30	3	14
Rano	Rano	10	1	20	2	30	3	20	2	50	5	13
	Jibiya	40	4	30	3	40	4	40	4	60	6	21
	Bebeji	20	2	50	5	20	2	30	3	30	3	15
Gaya	Wudil	20	2	40	4	30	3	40	4	70	7	20
	Garko	30	3	30	3	40	4	20	2	30	3	15
	Dawakin Tofa	20	2	30	3	20	2	30	3	40	4	14
Total		210	21	340	34	290	29	260	26	430	43	153

SF = Sample frame, SS = Sample size

Source: Reconnaissance Survey, 2014,

3.3 Method of Data Collection

The study made use of primary data. Primary data was obtained through the use of well-structured questionnaire administered to the respondents, interview and personal observations. The information obtained from the respondents in the groundnut value chain included, scale of operation, types and quantity of input supply, storage facilities cost of transportation and marketing tax for input dealers level; farming technique, fertilizer, labour, pesticide, availability of credit, land ownership or rent and seeds propagation at the producer level. At the processors level information covering sources of groundnut, processing procedure, cost of processing, packaging, storage, transportation and mode of product distribution was also considered while at market level, the information covered the output price, cost of purchase, type of customers, cost of transportation, whether any groundnut variety is preferred, access to the variety. Information were collected on the socio-economic characteristics such as age, marital status, household size, farm size, income, access to credit, and level of education.

3.4 Analytical Techniques

The tools of analysis used include:

3.4.1 Descriptive statistics

3.4.2 Net farm income

3.4.3 Multinomial logit model

3.4.1 Descriptive statistics.

Descriptive statistics was used to achieve objective (i), (ii) and (v) of the study. It involves the use of measures of central tendency such as mean, frequency distribution and percentages to describe the socio-economic characteristics of the groundnut value chain actors in the study area, the activities of women in groundnut value chain as well as the constraint confronting the groundnut value chain actors.

3.4.2 Net Farm Income

The Net Farm Income (NFI) was employed to achieve objective three (iii). It was used to estimate the cost and return of groundnut value chain actors. The formula for net farm income is stated as follows.

NFI= TR-TC **…….....**1

Where

NFI= Net farm income (₦)

TR= Total revenue (₦)

TC= Total cost of production (₦)

TC= TVC+TFC

TVC= Total variable cost (₦)

TFC= Total fixed cost (₦)

The fixed inputs are not normally used up in a production cycle. They were depreciated using the straight line method given by

$D = \underline{P-S}$

N ……..2

Where:

D = depreciation (₦)

P = Purchase value (₦)

S = salvage value (₦)

N = life span of asset (years)

Return per naira invested (RNI) is obtained by dividing the gross income (GI) over the total cost

(TC). Therefore, RNI= $\frac{GI}{TC}$

Where,

RNI = return per naira invested

GI = gross income

TC = total cost

Decision Rule

RNI > 1, It implies there is profit.

RNI = 1, the farmers is at breakeven

RNI < 1, the farmer is at loss

3.4.3 Multinomial Logit Model

Multinomial logit model was employed in this study to determine the socio-economic factors influencing profitability of the value chain actors, this was used to achieve objective four (iv) of the study.

The process is of a categorical nature, with numbering arbitrarily assigned so that it does not imply order of magnitude. This is expressed as follows:

$$\Pr(z=1) = \frac{e^{X\beta_{(1)}}}{e^{X\beta_{(1)}} + e^{X\beta_{(2)}} + e^{X\beta_{(3)}}} \quad \text{.....3}$$

$$\Pr(Z=2) = \frac{e^{X\beta_{(2)}}}{e^{X\beta_{(1)}} + e^{X\beta_{(2)}} + e^{X\beta_{(3)}}} \quad \text{.....4}$$

$$\Pr(Z=3) = \frac{e^{X\beta_{(3)}}}{e^{X\beta_{(1)}} + e^{X\beta_{(2)}} + e^{X\beta_{(3)}}} \quad \text{.....5}$$

Multinomial logit model is a choice between two or more alternative response s (Kartels *et al.,* 1999). The model however is unidentified in the sense that there is more than one solution to $\beta^{(1)}$, $\beta^{(2)}$, $\beta^{(3)}$ that lead to the same probabilities for Z = 1, Z = 2, and Z = 3. To identify the model, one of the $\beta^{(1)}$, $\beta^{(2)}$,$\beta^{(3)}$ is arbitrarily set to 0, which is now referred to as the reference or base category.

That is, if we arbitrarily set $\beta^{(1)} = 0$, the remaining coefficients $\beta^{(2)}$, $\beta^{(3)}$, measure the change relative to the Z = 1. In other words, we are comparing the case of processor (2) with other possible levels (1 and 3). Therefore, using three category response as in the model for this study and setting $\beta^{(1)} = 0$, the equation becomes.

$$\Pr(Z=1) = \frac{e^{X\beta_{(1)}}}{e^{X\beta_{(1)}} + e^{X\beta_{(2)}+1}} \quad \text{..... 6}$$

$$\Pr(Z=2) = \frac{e^{X\beta_{(2)}}}{e^{X\beta_{(2)}} + e^{X\beta_{(3)}+2}} \quad \text{.....7}$$

The relative probability of Z = 2 to the base category is

$$\frac{Pr\ (z=1)}{Pr\ (z=2)} = e^{X\beta_{(2)}} \text{..... 9}$$

If this is called the relative likelihood and assume that X and $\beta_k^{(2)}$ are vectors equal to $(X_2 \ldots X_n)$ and $\beta_2^{(2)} \ldots\ldots \beta_n^{(2)}$ respectively, the ratio of relative likelihood for one unit change in X_i relative to the base category is then stated as;

$$\frac{e^{\beta_{(2)}X_2 + \beta^z\ (X_{2+Z}) + \ldots + \beta_{(k)}X_k}}{e^{X\beta_{(2)}}X_2 + \ldots + \beta_2^{(2)} \ldots \beta_k^{(2)}X_k} \quad \text{.....10}$$

$InY_{1,2,3} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_{3+} \beta_4 x_4 + e$ ……11

Where;

Y_1= Farmer profitability

Y_2= Processors

Y_3= Marketers

x_1= Age

x_2= Marital status

x_3= Educational level

x_4= Cooperative participation

e= error term

$\beta_{0=}$ Constant

β_1- β_4= Coefficients of determination

Stratcorp (1999) reported that the exponential value of a coefficient is the relative likelihood ratio for one unit change in the corresponding variable. As pointed out, the dependent variable "profitability" has three (3) possible values; value 1 farmers profitability, value 2 if processors are moderately profitable and value 3 if marketers are highly profitable. The explanatory variables for this study are;

Age = (years)

Marital status = (dummy 1 for married, 0 otherwise)

Education = (years of schooling)

Cooperative association = (years of participation)

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Socio-Economic Characteristics of Women Value Chain Actors in Kano State

4.1.1 Age distribution of value chain actors

The result in Table 3 shows the age distribution of various actors in the value chain. Majority of the respondents (95%, 73%, 57%, 64% and 65%) of the groundnut input dealers, groundnut farmer, groundnut processors, groundnut-marketers and groundnut consumer interviewed respectively were between 41 and 60years of age. This implies that the actors, majority of whom are aged rely on their long years of experience to allocate their resources efficiently. This is in line with the findings of Bello, (2000) and George *et al* (2010) that age had a positive correlation with agricultural productivity.

Table 3: Age distribution of value chain actors

Actors	Freq. 21-40	Percentage	Freq. 41-60	Percentage	Freq. 61-80	Percentage	Total
Input dealers	1	5	19	95	0	0	20
Farmers	3	9	25	73	6	18	34
Processors	7	27	15	57	4	16	26
Marketers	7	28	16	64	2	8	25
Consumers	8	20	26	65	6	15	40

4.1.2 Marital Status of value chain actors

In rural communities, marriage is a respected and prestigious institution that bestows social status and recognition on people. The marital status of respondents as presented in Table 4 indicated that 95%, 97%, 92%, 96% and 95% of the respondents respectively were married. Implying that most of the women involved in the groundnut value chain in the study area were married, suggesting that marriage is a cherished value in the study area, with a resultant increase in their household size. This corroborates with the findings of Alfred and Fagbenro, (2006) and Odulate *et al*. (2011) who reported higher percentage of married women resulted in an increase in their household size, implying that there is appreciable number of family labour supply to accomplish various agricultural operations.

Table 4: Marital Status of value chain actors

Actors	**Married**	**Percentage**	**Single**	**percentage**	**Widow**	**Percentage**	**Total**
Input dealers	19	95	1	5	0	0	20
Farmers	33	97	0	0	1	3	34
Processors	24	92	0	0	2	8	26
Marketers	24	96	1	4	0	0	25

Consumers	38	95	0	0	2	5	40

4.1.3 Household size of value chain actors

The result in Table 5 shows the household size distribution of various actors in the value chain. Majority of the input dealers 45% had household size that ranged from 16-20 persons, about 38% of groundnut farmer had household size that ranged from 6-10 persons, majority (58%) groundnut processors had household size that ranged from 1-5 persons and 48% groundnut-marketers had household size that ranged from 11-15 persons while 57% of groundnut consumer had household size that ranged from 1-5 persons. This relatively large household size may decrease the number of labour needed at different value chain actors. These results were similar to the findings of (Oluwatayo *et al.*, 2008), there is a positive and significant relationship between household size and agricultural operations

Table 5: Household size of value chain actors

Actors	1-5	%	6-10	%	11-15	%	16-20	%	Total
Input dealers	4	20	6	30	1	5	9	45	20
Farmers	4	12	13	38	12	35	5	15	34
Processors	15	58	6	23	3	11	2	8	26
Marketers	8	32	4	16	12	48	1	4	25
Consumers	23	57	11	28	5	12	1	3	40

4.1.4 Educational level of value chain actors

Education is an important factor which can influence various activities of actors along the value chain and determine level of awareness on the rate of return on value addition in groundnut. Results from this study showed that 45%, 79%, 54%, 32% and 80% of groundnut input dealers, groundnut farmer, groundnut processors, groundnut-marketers and groundnut consumer respectively had only Qur'anic education while 25% (input dealers), 3% (farmers), 11% (processor), 4% (marketers) and 10% (consumers) respectively had a maximum of primary school education. The educational qualification of the actors shows that majority of the farmers have little or no exposure to formal education; primary education is the highest educational attainment by a majority of the actors. This is also confirmed by the general opinion that most groundnut folks in the study area were illiterate or semi-illiterates; most of whom have dropped out of the formal school system (Olubanjo *et al*., 2007; and Alfred *et al*, 2008). The low level of education in the study area for groundnut value chain could explain that the study area are generally isolated and marginalized, with limited or no access to education services. Available government schools are very far, at distances of at least 10 to 20 kilometers from communities.

Table 6: Educational level of value chain actors

Actors	Qur'anic	%	Primary	%	Secondary	%	Tertiary	%	Total
Input dealers	9	45	5	25	5	25	1	5	20
Farmers	27	79	1	3	5	15	1	3	34
Processors	14	54	3	11	8	31	1	4	26
Marketers	8	32	1	4	6	24	7	12	25
Consumers	32	80	4	10	1	3	3	7	40

4.1.5 Cooperative Membership of value chain actors

Membership of cooperatives therefore influences the adoption of improved technologies resulting in higher productivity and poverty alleviation. Majority of the actors (60%, 59%, 54%, 52% and 100% of groundnut input dealers, groundnut farmer, groundnut processors, groundnut-marketers and groundnut consumer respectively) were not in any cooperative society; which may be the reason for not benefiting from any source of loan. This finding is in line with Odebiyi (2010) that cooperative groups ensure that their members derive benefits from the groups such as they could not derive individually. One of the biggest challenges faced by the groundnut sub-sector in the study area is value addition. A deprivation of value addition facilities in the study area is a major setback to the groundnut value chain industry, most of the respondents regarded poor transportation network and lack of storage facilities as major constraints to the value chain development.

Table 7: Cooperative Membership of value chain actors

Actors	Yes	Percentage	No	Percentage	Total
Input dealers	8	40	12	60	20
Farmers	14	41	20	59	34
Processors	12	46	14	54	26
Marketers	12	48	13	52	25
Consumers	0	0	40	100	40

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4.1.6 Source of Credit of value chain actors

The result presented in Table 8 shows that 100%, 68%, 92%, 68% and 100% of groundnut input dealers, groundnut farmer, groundnut processors, groundnut-marketers and groundnut consumer respectively) financed their various operations from personal

savings while 32%, 8% and 32% of dealers, groundnut farmer, groundnut processors and groundnut-marketers respectively) sourced credit, through Bank of agriculture. The low access to credit could be attributed to the fact that government seldom grants financial credit to farmer. Ekong (2003) asserts that credit is a very strong factor that is needed to acquire or develop any enterprise; its availability could determine the extent of production capacity. It also agrees with findings of Nasiru (2010) who noted that access to micro-credit could have prospect in improving the productivity and contributing to uplifting the livelihoods of disadvantaged rural dwellers.

Table 8: Source of Credit of value chain actors

Actors	Personal saving	Percentage	Loan from bank	percentage	Total
Input dealers	20	100	0	0	20
Farmers	23	68	11	32	34
Processors	24	92	2	8	26
Marketers	17	68	8	32	25
Consumers	40	100	0	0	40

4.2 Role of Women Groundnut Value Chain Actors

4.2.1 Role of input dealers

Seed companies in the state are becoming increasingly active in non-traditional distribution networks for groundnut seeds in order to expand the market demand for improved seed varieties. In particular, the principle seed companies involved in supply and distribution of groundnut seeds, namely Kano state agricultural supply company (KASCO), and Seed Co, are linking to farmers through companies that are developing

interlinked transactions business models, such as National seed council Zaria and premium seed company limited, which engage farmers through an out-grower arrangement. These companies distribute improved seed varieties produced at National seed council Zaria as well as the seed from the seed companies. Premium seed company also engage farmers in multiplying seed, which is later distributed to other farmers in the study area.

The study revealed that 90% of respondents indicate that seed is the main input used in growing groundnuts in all the study areas while about 10% of the respondents use agrochemical. None of the farmers interviewed applied fertilizer or manure to groundnuts fields. This implies that groundnut production does not required fertilizer application since is a leguminous crop that can fix nitrogen naturally.

Table 9: Role of input dealers

Input	**Frequency**	**Percentage**
Seed	18	90
Agrochemical	2	10
Fertilizer	0	0
Total	20	100

4.2.2 Role of farmers

The study revealed that majority (88%) of the women farmers use recycled seed that has been retained from previous harvests while (13%) buy and used groundnuts packed as seed in 500 g or 1 kg from the local agricultural input shops. 82% of the women

reported that groundnut cultivation was primarily conducted using family labour while about 18% of the respondents use animal draft power in groundnut cultivation and virtually none use mechanical power as hired labour. About 41% of the women use family labour in the study area while 59% employed the use of animal draught power for weeding groundnuts.

The study revealed that not only large scale farmers, small and medium scale farmers also overwhelmingly growing groundnut in the surveyed villages.

Land preparation and planting is commonly done manually. Unlike in maize planting, where farmers plant behind the plough, groundnuts are preferably not planted to the depth of a plough, because harvesting becomes difficult. Consequently, these households plant using hand hoes to ensure that the seeds do not go very deep. Labour is a critical factor in groundnuts production. This is because; there is limited use of mechanical power in groundnuts production, especially among very small-scale farm.

The findings in Table 10 revealed that only 82% of the women farmers reported that groundnut cultivation was primarily conducted using family labour while about 18% of the respondents use animal draft power in groundnut cultivation and virtually none use mechanical power as hired labour.

Weeding is the most critical labour-demanding activity in groundnuts production. Unlike in other crops, weeding groundnuts involves making ridges to ensure the pods do not grow on the surface. According to most farmers, growing groundnuts on ridges makes harvesting easier. Labour demand in weeding is a decisive factor in area to be planted for most households. Even the large-scale households in the study area indicated that labour demands during weeding discourage them from planting larger areas of

groundnuts. When using animal draught power (ADP), weeding only takes a few hours and causes no significant pod damages if the groundnuts are planted on ridges.

The result in Table 10 revealed that 41% of the respondents use family labour in the study area while 59% of the farmers employed the use of animal draught power for weeding groundnuts. Encouragement of animal draught power among groundnut producers may therefore provide important labour saving opportunities for farmers, leading to improved income from groundnuts.

The results revealed that 85% employed family labour by use of hand shelling because shelling is done by hand to avoid breakages while about 15% of the respondents use hired labour. Farmers attested to these facts that where labour is hired, weeding is the most expensive activity and planting is the cheapest.

The result presented in Table 10 shows that 94% of women groundnut farmers financed their groundnut production from personal savings while 6% sourced credit, through Bank of agriculture. The low access to credit could be attributed to the fact that government seldom grants financial credit to farmer. Ekong (2003) asserts that credit is a very strong factor that is needed to acquire or develop any enterprise; its availability could determine the extent of production capacity. it also agrees with findings of Nasiru (2010) who noted that access to micro-credit could have prospect in improving the productivity of farmers and contributing to uplifting the livelihoods of disadvantaged rural farming communities.

Table 10: Role of Farmers

Input	Frequency	Percentage
Seed		
Improved	4	12
Unimproved	30	88
Land preparation		
Family labour	6	18
Hired labour/draft animal	28	82
Weeding		
Family labour	14	41
Hired labour/draft animal	20	59
Harvesting/threshing and shelling		
Family labour	29	85
Hired labour	5	15
Capital		
Informal	32	94
Formal	2	6
Total	**34**	**100**

The market “Pull” is based on integrated transactions and information. Farmers purchase inputs products that are produced according to their preferences. The farmer becomes the core link in producing the products that the consumers desire. KASCO and ADP are into Research and development, whilst including techniques targeted at increased production, is also focused on consumer needs, and attempts to take account of all of the links, and dependencies in the value chain, e.g. processing, environmental and social costs or considerations, as well factors such as health impacts, education and learning.

Communication is in both directions. It is important that both farmers and researchers are aware of factors limiting production, just as much as farmers and other producers are made aware of consumer requirements.

4.2.3 Role of processors

There is very little value addition in terms of processing of groundnuts taking place in the study area. The main forms of processing are shelling, oil extraction, and grinding into powder and cake processing.

The result in Table 11 revealed that 50% of the respondents after harvesting go through a process of shelling in form of value addition although the value-added is minimal. This implies that there is a higher demand for shelled groundnuts than for unshelled groundnuts because most buyers do not want to invest in the high labour demand and cost of shelling.

About 19% of the respondents engaged in oil pressing, and grinding into peanut powder and peanut butter making. Oil pressing, although done at low levels, is mostly for

selling while about 31% of the respondents engaged in peanut-powder and cake are primarily for consumption. Both the powder and the cake are important ingredients for local recipes in Kano state.

Table 11: Role of Processors

Processor	**Frequency**	**Percentage**
Shelling	13	50
Oil extraction	5	19
Grinding into pea and powder (cake)	8	31
Total	26	100

The market "Pull" is based on integrated transactions and information. Consumers purchase products that are produced according to their preferences. The farmer becomes the core link in producing the products that the consumers desire. Research and development, whilst including techniques targeted at increased production, is also focused on consumer needs, and attempts to take account of all of the links, and dependencies in the value chain, e.g. processing, environmental and social costs or considerations, as well factors such as health impacts, education and learning. Communication is in both directions. It is important that both consumers and processors are made aware of factors limiting production, just as much as farmers and other producers are made aware of consumer requirements.

4.2.4 Role of marketers

Marketing is the most competitive stage of the value chain, where key players intensively compete in terms of price and the timing of purchasing from the farmers. These key players include local large-scale traders who operate input and output shops, and large processing companies.

These large-scale agro-input/output traders assemble the groundnuts from the farmers using different methods. The most common method of acquisition is for farmers to deliver the groundnuts directly to the large-scale agro-input/output traders' shop. At the time of the study, queues of farmers were seen waiting to sell their produce in front of Danhusawa Store in Jibiya. The second method is for these large-scale agro-input/output traders to buy groundnuts from intermediaries who purchase the groundnuts in the villages. The intermediaries usually take the form of agents buying on behalf of a larger-scale traders and/ using their own funds. Thirdly, the large-scale agro-input/output traders/ hire people to camp in the villages and assemble the groundnuts. When certain volumes have been collected, often after a week of camping, the groundnuts are transported to the stores.

The result in Table 12 revealed that about 64% of the marketers are retailers, 16% of the marketers are rural assemblers and 20% were wholesaler in groundnut value chain. This implies that the market is dominated by retail marketers and increasingly competitive one.

Table 12: Role of Marketer

Marketer	Frequency	Percentage
Retailer	16	64

Rural assembler	4	16
Wholesaler	5	20
Total	25	100

4.2.5 Groundnut Value Chains Links

Each value chain is unique, and contains a unique combination of "links." In Kano state groundnut value chain, for example figure 1, could say that the women farmers who grow the groundnut and the co-operatives they belong to or sell to, the traders, the processing companies, and the various market players are the primary links in the value chain, in addition to consumers. But there are other important links. These include the shops and people who sell the farmer inputs such as seed and agrochemicals to grow the groundnut.

There are also raw groundnut wholesalers, transporters, and other players. Of course, all links are affected by the national and global policy environment. On the left hand side of the diagram are the different stages (functions) of the groundnut value chain in Kano state. The first is input supply, then production, then processing and then marketers. In blue are the actors in the chain that are involved at each stage. In some cases, the same actor maybe involved in more than one stage. On the right hand side of the diagram are the institutions that help support the actors in the value chain.

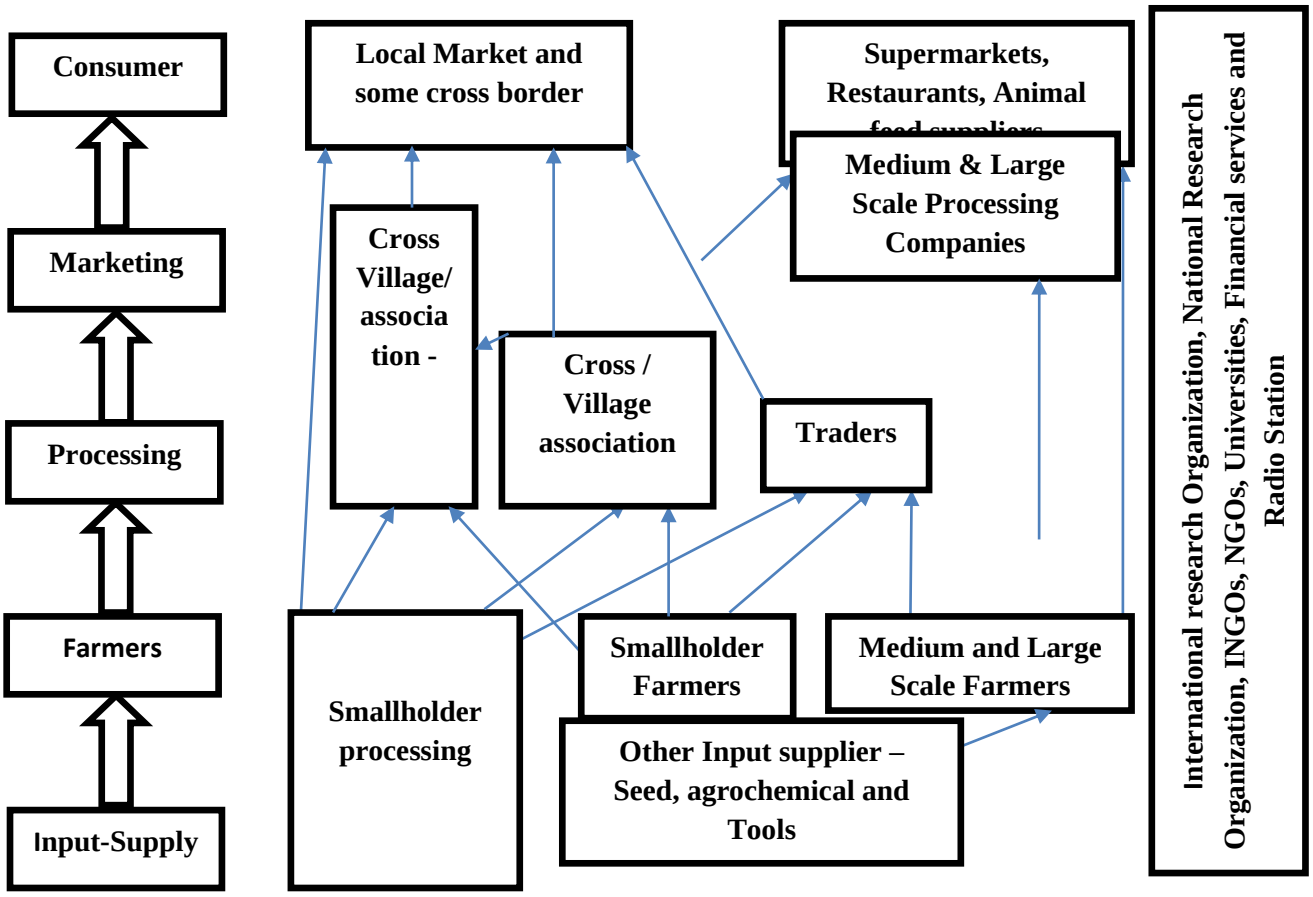


Figure 1: Value Chain Mapping

4.3.1 Cost and return of groundnut farmers

The cost and return (profitability) of groundnut production in Kano state was measured by estimating the difference between the total revenue from the sale of groundnut output and the cost component involved in the production. Groundnut seed used by the farmers in the study area were mainly unimproved seeds taken from the last harvest while some were purchase from the input dealers. The quantity of groundnut seed was 32.892kg/ha with an average market price of ₦84 per kg was used and this constitutes 2% of the total cost of production. The quantity of fertilizer was 270.24kg/ha with an average market price of ₦100 per kg was used and this constitutes 22% of the total cost of production. The quantity of agrochemical was 0.728kg/ha with an average market price of ₦600 per litre was used and this constitutes 1% of the total cost of production.

Labour costs consist of cost of land preparation, planting, fertilizer application, weeding, replacement and harvesting. The family labour was computed on the basis of opportunity cost in man-day. The wage rate varied according to farm operation to be performed. An average wage rate of ₦400 per man-day was used, giving the average labour cost per hectare to be ₦94673.88.

The total cost of fixed inputs (cost of renting land and depreciation of tools) incurred on groundnut production was ₦963.22 and this constitute 1% of the total fixed cost.

The total revenue (TR) was ₦251736.45while the total cost (TVC + TFC) was ₦125893.77. The net farm income was therefore ₦125842.68. The average rate of return on investment (return per naira invested) was 2.00, indicating that for every ₦1

invested in groundnut production in Kano state; a profit of ₦2 was made. Thus, it could be concluded that groundnut production in the study area is profitable. This finding is similar to that of Okoye *et al.,* (2009) who observed that groundnut production is profitable by returning N1.80 to every N1.00 invested.

Table 13: Cost and return of farmers

Variable	**Value (₦)**	**Percentage contribution**
Total revenue (TR)	**251736.45**	
Cost of seed (a)	2795.66	2
Cost of fertilizer (b)	27023.87	22
Cost of agrochemical (c)	437.14	1
Cost of labour (d)	94673.88	75
Total variable cost (TVC=a+b+c+d)	124930.55	99
Total Fixed cost (TFC)	963.22	1
Total cost (TC= TVC+TFC)	**125893.77**	**100**
Net income (TR-TC)	125842.68	
Return to investment	**2.00**	

4.3.2 Cost and return of processors

The cost and return (profitability) of groundnut processing in Kano state was measured by estimating the difference between the total revenue from the sale of processed groundnut (cake, boiled, fried and oil extraction) and the cost component involved in the processing. The average quantity of groundnut purchase was 2383.70kg with an average market price of ₦84 per kg was used and this constitutes 87% of the total cost of processing. The Cost of firewood used was ₦22325 and this constitutes 9% of the

total cost of processing. The average cost of buying drums was ₦5000 and this constitutes 2.33% of the total cost of processing.

The average cost of buying frying pan was ₦85.16 and this constitutes 0.04% of the total cost of processing, cost of purchasing spoon was ₦120.0 and this constitutes 0.1% of the total cost of processing, cost of grinding the groundnut was ₦2200 and this constitutes 1.33% of the total cost of processing while cost of purchasing bucket was 288.26 and this constitutes 0.2% of the total cost of processing.

The total revenue (TR) was ₦515,058.49 while the total cost (TVC + TFC) was ₦230,249.42. The net income was therefore ₦284809.07. The average rate of return on investment (return per naira invested) was 2.24, indicating that for every ₦1 invested in groundnut processing in Kano state; a profit of ₦2 and 24 kobo was made. Thus, it could be concluded that groundnut processing in the study area is profitable.

Table 14: Cost and return of processors

Variable	**Value (₦)**	**Percentage contribution**
Total revenue (TR)	**515,058.49**	
Cost of purchasing groundnut	200,231	87
Cost of firewood	22325	9
Cost of drums	5000	2.33
Cost of frying pan	85.157	0.04
Cost of spoon	120.00	0.1
Cost of grinding	2200	1.33
Cost of bucket	288.26	0.2
Total cost	**230,249.42**	**100**
Net income (TR-TC)	284809.07	
Return to investment	**2.24**	

4.3.3 Cost and return of marketers

The cost and return (profitability) of groundnut marketing in Kano state as presented in Table 15 was measured by estimating the difference between the total revenue from the sale of marketing groundnut (processed and unprocessed) and the cost component involved in the marketing. The average cost of groundnut purchase for both processed and non-processed was ₦147,180.65 and this constitutes 98% of the total cost of marketing. The average cost of storage was ₦244.74 and this constitutes 0.4% of the total cost of marketing. The average cost of transportation was ₦1236.84 and this constitutes 1% of the total cost of marketing while cost marketing tax was ₦257.89 and this constitutes 0.6% of the total cost of marketing of groundnut.

The total revenue (TR) was ₦421,321.12 while the total cost (TC) was ₦148,920.12. The net income was therefore ₦272401. The average rate of return on investment (return per naira invested) was 2.83, indicating that for every ₦1 invested in groundnut marketing in Kano state; a profit of ₦2 and 83 kobo was made. Thus, it could be concluded that groundnut marketing in the study area is highly profitable.

Table 15: Cost and Return of Marketers

Variable	**Value (₦)**	**Percentage contribution**
Total revenue (TR)	**421,321.12**	
Cost of purchasing groundnut	147,180.65	98
Cost of storage	244.74	0.4
Cost of transportation	1236.84	1
Cost of marketing tax	257.89	0.6
Total cost (TC)	**148,920.12**	**100**
Net income (TR-TC)	272401	

Return to investment	**2.83**

4.4 Socio-economic Factors Affecting Value Chain Actors' Profitability.

The results of the parameter estimates of the socio-economic factors affecting value chain actors' profitability is presented in Table 16. The result of the multinomial logit (MNL) regression analysis indicates that socio-economic characteristics (age, marital status, cooperative membership and education) of different value chain actors had effect on their profitability.

Results of the parameter estimates (the estimated coefficients along with the standard errors and the t-ratios) from the multinomial logit (MNL) regression are presented in Table 17. The likelihood ratio statistic as indicted by χ^2 statistic was significant ($P < 0.05$), suggesting that the model has a strong explanatory power. In all cases the estimated coefficients, were compared with the base category (processors profit) because of its moderate return to investment which was only used as the reference point against which farmers and marketers were contrasted.

Age (years) of the farmer, processor or marketer is expected to influence the profit generated from activity groundnut. The a priori expectation is that the older the value chain operator the more the profit from groundnut. This is because age increases experience to expand the capacity of the operator to take advantage of economy of scope, in terms of the capacity to diversify their income sources. The probability that the age of value chain actor (processor) will increased the profitability was positively and significantly related with marketers. This implies that the more the age of the actor the more the chances of making more profit.

Membership of a cooperative provides an identity to the members as well as a platform to meet their socioeconomic aspirations. The probability that members increases in their

profitability on the basis of large membership was low. This implies that higher membership strength of the value chain actors does not automatically translate to improve their profitability. Thus, this study shows that membership of cooperative association had an inverse and significant relationship with the probability of processors profit.

Table 16: Factors Affecting Value Chain Actors' Profitability.

Variable	**Farmers**		**Marketers**	
	Coefficient	**z-ratio**	**Coefficient**	**z-ratio**
Constant	0.016 (0.690)	0.02	0.136 (1.750)	0.08
Age	-0.021 (0.048)	-0.44	-0.182 (0.051)	2.53***
Marital status	-2484 (1.788)	-1.39	-0.021 (0.048)	-1.10
Educational level	-0.041 (0.067)	-0.61	-0.041 (0.0413)	-1.00
Cooperative membership	-0.105 (0.0054)	-1.96*	-0.131 (0.0656)	1.99**
Log likelihood function	*L/f*	-154.585		
LR chi square (χ^2)	17.816			
Prob.> χ^2	0.04			

*Asterisk indicate significance ***P≤0.01,** P≤0.05, * P≤0.10.*

4.5.1 Constraints faced by input dealers

The result in Table 18, revealed that majority of the groundnut input dealers (37%) ranked insufficient capital to expand their scale of operation as the most important constraints. This implies that the input dealers in the study area operate as a small scale input supplier; this might have effect on volume of the output that would be produced. About 34% of the respondent indicates lack of government support as the most serious

constraint while 29% of the input dealers complained that price fluctuation is the most serious constraints affecting them.

Table 17: Constraints faced by input dealers

Input dealers constraints	Frequency	Percentage	Rank
Lack/insufficient capital	29	37	1st
Lack of government support	27	34	2nd
Price fluctuation	23	29	3rd
Total	**79**	**100**	

4.5.2 Constraints faced by farmers

The result in Table 19 revealed that majority of the groundnut producers (32%) ranked pest and disease infestation as the most serious constraint responsible for pre-harvest and post-harvest losses by groundnut producers; about 23% of the respondent indicates inadequate capital to expand their scale of (operation) production as the most important constraints. This implies that if the farmers can operate large scale production, the volume of the output would be higher than the current state of production. The price hike of inputs might not be unconnected with the constraint of inadequate capital. The farmers mostly source and buy their inputs from the open market which is usually at exuberant rate. Inadequate government support rank third while about 14% of the respondents attesting to this fact that poor pricing/fluctuation of groundnut were the fourth constraint faced by farmers. This finding is in line with Bureau of Statistic (2012), Prices for groundnut responded to the law of demand and supply as no price regulation mechanism exists and there is no international organization that records their movements such as for cocoa, coffee and sugar.

Table 18: Constraints faced by farmers

Producers constraints	Frequency	Percentage	Rank
Pest and disease infestation	71	32	1st
Inadequate Capital	51	23	2nd
Inadequate government support	36	16	3rd
Lack of Modern Machineries	33	15	4th
No definite Market Price	29	14	5th
Total	**220**	**100**	

4.5.3 Constraints faced by processors

Results from Table 19 revealed that ground nut seed which is the most important component in processing is very expensive compared with the seed of other crop as reported by 30% of the respondent. About 28% of the respondent complained of the availability of the product. Inadequate capital (24%) which hinders processors in expanding the groundnut processing business, which could be the reason why majority of the groundnut processors are small scale processor in the study area. while about 18% of groundnut processor in the study area do not have access to market to sell their product.

Table 19: Constraints faced by processors

Processors constraints	Frequency	Percentage	Rank
High cost of product	66	30	1st
Inadequate/lack of product	62	28	2nd
Lack/ inadequate capital	52	24	3rd
Inadequate/lack of market	40	18	4th
Total	**220**	**100**	

4.5.4 Constraints faced by marketers

The result in Table 20 revealed that majority of the groundnut marketers 33% revealed that high cost of transportation is the most serious constraints affecting them. About 17% of the respondents attesting to this fact that poor pricing/fluctuation of groundnut were the fourth constraint faced by farmers. About 12% of the marketers indicated inadequacy of capital and credit facilities which rank third, this affects groundnut marketing in the study area. About 11% of the respondents complain about security challenges, 10% of the respondents complained of high taxes paid in the market. Another constraint respondents had was storage after harvest indicated by 9% of the respondents, this is because most marketers did not have store, hence they were compelled to sell groundnut immediately after purhase and it is possible that the price at this time is not high enough to enable the marketers to break even, let alone to make profit from the enterprise, that is, pest attack is usually very high during storage as a result of poor storage facilities, while 8% of the respondents indicate poor market as the most serious constraint in the study area.

Table 20: Constraints faced by marketers

Marketers constraints	**Frequency**	**Percentage**	**Rank**
High Cost of Transportation	74	33	1st
Price Fluctuation	39	17	2nd
Lack of Credit facilities	26	12	3rd
Security Challenges	24	11	4th
High Taxes	22	10	5th
Poor storage Facilities	20	9	6th
Poor Markets	19	8	7th
Total	**224**	**100**	

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This study looked at roles of women in groundnut value chain in Kano state. Three agricultural zones were purposively selected based on their involvement in groundnut value chain activities. Three local government areas were randomly selected from three agricultural zones and 5 women actors from groundnut value chain were selected in this area. The purpose of the study was to examine the roles of women in groundnut value chain in Kano state, Nigeria, and to achieve this, the study came up with five main objectives. These were to: describe the socio-economic characteristics of women in groundnut value chain, describe the roles engaged in by women along the value chain, estimate the cost and return associated with specific roles along the value chain actors, determine the socio-economic factors influencing profitability of specific roles in value chain and to describe the constraint faced by women in groundnut value chain in the study Area.

The primary data were collected from 149 respondents using structured questionnaire. The statistical tools used to analyze the data were descriptive statistics, net farm income and multinomial logit model. A descriptive analysis of the sample groundnut women actors was done to understand and describe the socio-economic characteristics along groundnut value chain, activities engaged in by women in groundnut value chain and as well as the constraints encountered by women groundnut value chain actors in the study area.

The result of the analysis shows that 95%, 73%, 57%, 64% and 65% of input dealers, farmers, processors, marketers and consumers respectively fell within the age range of 41-60 years and 20-40 years. The majority of women actors along value chain and the

household size ranged from 1-10 persons with 55%. The majorities (98%) of the value actor have only Quranic education and about 92% of the value chain actors were married.

The majority (93%) of women in groundnut value chain actors do not participate in any cooperative society while about 89% women in groundnut value chain actors used their personal savings to finance their various activities in groundnut value chain.

The result of the net income for the producer, processors and marketers were 125,842.68, 284,809.07 and 272,401 respectively. The returns per naira invested were 2.00, 2.24 and 2.83 respectively. Also, the result indicates that the processors have higher net income in relation to the other actors in the study area. Thus, it could be concluded that groundnut production, processing and marketing in the study area were highly profitable.

Age and cooperative association were the only socioeconomic factors influencing profitability in the study. Finally, among the constraints identified in the study area, the majority of the actors 37%, 32%, 30% 33% attested to the fact that inadequate capital, inadequate capital, high cost of product and high cost of transportation were major constraints faced.

5.2 Conclusion

The analysis revealed that groundnut production, processing and marketing are profitable. Women play greater role in groundnuts value chain. Groundnut has a special place in terms of cash needs for women. It also employs a number of actors who include farmers, processors, marketers and other service providers. Its value chain has a number of opportunities that when exploited will directly and indirectly improve the welfare of the actors and their communities. However, the groundnut value chain also has

constraints faced by the different chain actors. These should be addressed in order to improve the value chain efficiency.

5.3 Contribution of the study to knowledge

i. The study revealed that, the net income for the producer, processors and marketers were 125,842.68, 284,809.07 and 272,401 respectively. The returns per naira invested were 2.00, 2.24 and 2.83 respectively, it could be concluded that groundnut production, processing and marketing in the study area were highly profitable.

ii. The study discovered pest and disease infestation as the most serious constraint responsible for pre-harvest and post-harvest losses by groundnut producers

5.4 Recommendations

From the following findings of this study, the following recommendations, among others are put forward:

i. Inadequate capital was one of the constraint to groundnut commodity value chain, it is therefore, recommended that women groundnut value chain actors should form cooperative societies, to pull their resource together and help themselves in purchasing of inputs for their various operation.

ii. Majority of the groundnut commodity value chain actors source their credit from personal savings and relatives which are mostly not adequate for appreciable agricultural operations. Agricultural loan facilities should be made accessible to groundnut value chain actors to ensure timely and adequate utilization of agricultural inputs for improvement in farm production efficiency to the farmers.

iii. The distribution of inputs like fertilizer should be done at the right time by the government.

REFERENCES

Amber K. and Katrina F. (2004). Groundnuts (*Arachis Hypogaea*), Woman and

Development:Impact on Nutrition and Women's Roles in Western Africa. Retrieved on 25/5/12 from forest.mtu.edu/peforestry/resources/studentsprojects/groundnut.html

Amonor, B. (1999). Information Asymmetry and Traceability Incentives for Food Safety,Analysis de 36th Encontro Nacional de Economia [proceeding of the 36th Brazilian Economics meeting]. Brazilian Association of Graduate Prpgrams in Economics, Brazil,pp 19.

Anon (2004). Gendered Value Chain Analysis: Red Gram, Groundnut, Neem, Tamarind. Available at : http : // www. Frame web. Org/ file – download. Php/Gendered+ value+chain + Analysis. Pdf ? url-id.Retrieved 10th October,2014.

Bammann H. (2007). Participatory Value Chain Analysis for Improved Farmer Incomes, Employment Opportunities and Food Security. *Pacific Economic Bulletin.* 22 (3), 113- 129.

Berem, R. M., Obare, G. and Owuor, G. (2010). Is Value Addition in Honey a Panacea for Poverty Reduction in the Asal of Africa? Empirical Evidence from Baringo District in Kenya. Contributed Paper Presented at the Joint 3rd Africa Association of Agricultural Economics (AAAE) and the 48th Agricultural Economics Association of South Africa (AEASA) Conference, Cape town, South Africa, Sep 19th -23rd Sept, 2010.

Brent Green (2010). Generation Reinvention: How Boomers Today Are Changing Business, Marketing, Aging and the Future. At Brent Green and Associate Company,America. retrieved on 20/11/12 ,www.bgassociates.com. ISBN-10: 1450255337,pp 39.

Consultative Group on International Agricultural Research, (2005). Research and impact retrieved on 18/1/11, www.cgiar.org/impact/research/groundnut.html

CYE Consult (2008) Value Chain Analysis of Selected Commodities. Institutional Development across the Agri-food Sector (IDAF).

Echekwu, C.A and Emeka, I. (2005). Groundnut, Endowing, the Groundnut /Rediscovery programme in Nigeria. *Opah mission* Abuja, pp 18.

Food and Agriculture Organization (2009b). FAO Agricultural production data. FAO, Rome. Accessed at ://faostat.fao.org/site/368/default.aspx#.

Food and Agriculture Organization (FAO) (2006). Asia Regional Workshop Report on Best Practices in Livelihood Diversification, FAO Regional Office Bangkok, 14-17 November, 2006.

Food and Agriculture Organization Statistics (FAOSTAT) (2009). Crop Production 2008, Statistic Division, Food and Agricultural Organization of the United Nations.

Food and Agriculture Organization, (FAO) (2006) Commodity Chain Analysis Constructing the Commodity Chain Functional Analysis and Flow Charts *EASYPol Module 043 Online Resource materials for policy making*

Food and Agriculture Organization, (FAO), (1994). Expert's Recommendations on Fats and Oils in human nutrition. The article is adapted from the first chapter of fats and oils in human nutrition: report of joint expert consultation, FAO Food and Nutrition Paper No. 57.

Freeman, H.A., Nigam, S.N., Kelly, T.G., Ntare, B.R., Subrahmanyam, P. and Boughton, D., (1999). The World Groundnut Economy, Facts, Trends and Outlook Patancheru 502324, Andru Pradesh, India. Information Crop Research Institute for the Semi-Arid Tropics 52 pp, ISBN 92-9066-404-5.

Fresco, L.O., (1998). Higher Agricultural Education. An Opportunty in Rural Development for Women. Sustainable Development Department. Food and Agricultural Organization (FAO), for the United Nations, pp 4.

Gereffi, G. (1999). "A Commodity Chains Frame Work for Analyzing Global Industries. Workshop on Spreading the Gains from Globalization". University of Sussex, Institute of Development Studies, pp 98.

Gereffi, G., Humphrey, J., Sturgeon, T. (2005). "The Governance of Global Value Chains." *Review of International Political Economy*, 12(1): 20-25.

Gereffi, G., Korzeniewicz, M. (1994). Commodity Chain and Global Capitalism.Westport, CT. London.

Gsp News (2004) Sustainable seeds system for west Africa-ICRISAT.

German Agency for Technical Cooperation (2006): Value Chain Analysis and "Making Markets Work for the poor" (M4P) - Poverty Reduction through Value Chain Promotion. Eschborn: GTZ.

Hadiza D. (2008). Television Programme on Groundnut Processing using National Agricultural Extension and Research Liaison Service oil processing machine. Ahmadu Bello University, Zaria.

Hassan, R., and Nhemachena, C. (2008). Determinants of African Farmer's Strategies for Adapting to Climate Change: Multinomial Choice Analysis. *African Journal of Agricultural Resources*, 2(1): 83-104. http//www.icrisat.org. Retrieved 20th May, 2015.

Ibrahim, H., Y., Saingbe, N., D., and Ibrahim, H., I. (2010): An Evaluation of Groundnut Processing by Women in a Rural Area of North Central Nigeria. *Journal of Agricultural Sciences*, 2 (1): 206-212.

ICRISAT, (2009). International Crops Research Institute for the Semi-Arid Tropics

(ICRISAT). Groundnut.[http://www.icrisat.org/groundnut/GroundNut.htm] Visited 17 July 2009).

Ilu Y.I. and Damisa M.A. (2007). Commodity Chain Analysis of Groundnut Sector in Nigeria: Case Study of KRIP Area, Kano Sate. A Report Submitted to ADENI Project/ NAERLS, (2007).

Kamau, K.F. (2008). The Rise of the Supermarket: Change in the Food Retailing in Sub-Sahara Africa. Value Chain Analysis. Unpublished Assignment 3 Submitted To: Maastricht School Of Management,pp 34.

Kiiza, B., Pederson G. and Lwasa, S. (2011). The Role of Market Information in Adoption of Agricultural Seed Technology in Rural Uganda. *International Journal of ICT Research and Development in Africa*, 2(1), 29-46, January-June 2011.

Kimmins F.M, Deom C.M, Subrahmanyam P, Chiyembakeza M. and Van der Merive P.J.A (1999) Groundnut Rossete: A Virus Affecting Groundnut Production in Sub-saharan Africa. The American Phatophalogical Society, pp 193.

Kiplinsky, R. and Morris, M. (2001). A Handbook for Value Chain Research Institute for Economic Studies. Brighton, United Kingdom Institute of Development Studies, University of Sussex, pp 23.

Kowal, J.M., and Kassam, A.H. (1973). An Appraisal of Drought in 1973 Groundnut Production in the Guinea and Sudan Savanna Areas of Nigeria. *Savanna*, 2(2):159-164.

Kydd, J., Pearce, R., and Stockbridge, M. (1996). The Economic Analysis of Commodity System: Environmental Effects, Transaction Cost and the Francophonr Filiere Tradition, presented at the ODA/NRSP Socio-Economic Methodology (SEM) workshop, ODI: London, 29-39 April 1996.

Maddala, G.S. (1983). *Limited Dependent and Qualitative Variables in Econometrics*. Econometric Society Monographs. Cambridge University Press:Cambridge,pp 202.

Mahmoud, M.A., Osman, A.K., Nalyongo, P.W., Wakjira, A., David, C. (1991). Peanut in East Africa: 1981-1990. In Nigam SN (Ed.). Peanut, A Global Perspective: Proc. Intl. Workshop, 22-29 Nov, 1991. ICRISAT Center, Patancheru, India. pp. 89-95.

Michael, V.B., Boomsmann, M., Cucco, L., Janssen, N., Moustier P.; Prota, L., Purcll, T., Smith, D., and Wijk S.V., (2010). Marking Values Chain Work Better for Poor and Access For the Cities in Asia (SNV), Markets Of Agricultural Linkage For Cities In Asia (CIRADA/VAAS/PSARD) Fresh Studio Partners, Marije Boomsman-Development Consultant University of Technology, Syney Macquarie University. Making Markets Work Better For The Poor Agri-Good Consulting International, 205.

Mwesige, D. (2009). Using multi-stakeholder processes for capacity development in an Agricultural value chain in Uganda. Working with Value Chains, 181-194.

Nalumansi, S.R., and Kaul, R.N., (1992) Studies on the Traditional System of Groundnut Oil Extraction and Possible Improvements. IAR-Ford foundation project on technology for women (Ford foundation Grant No.900-0260-1), pp 112.

National Population Commission Data of Nigeria (NPC) (2006). NPC Figures: Abuja, Nigeria.

Nfare B.R., Waliyar, F., Ramouch, M., Masters, E., and Ndejunga, J. eds, (2005). Markets Prospects for Groundnut in West Africa. Common Fund for Commodities, Standhouderskade 55, 1077 AB Amsterdam. The Netherlands, pp 318-340.

Ngore, P. M., Mshenga, P. M., Owuor, G. and Mutai, B. K. (2011). Socio-economic Factors Influencing Meat Value Addition by Agribusiness in Kenya. *Current Research Journal of Social Sciences*, 3(6); 453-464.

Nigerian Exchange Company Limited (2009). Retrived on 25/5/12 www.ngex.com

Nnamdi, A.E (2010) "Groundnut Processing and Trading in Nigeria" retrieved on 18/1/11from*http://www.articlebase.com/business-opportunities-articles/groundnut-processing-and-trading-in-nigeria-3923801.html*.

Olomola Ade S. (2007) "Strategies for Managing the Opportunities and Challenges of the Current Agricultural Commodity Booms in SSA" in Seminar Papers on Managing Commodity Booms in Sub-Saharan Africa: A Publication of the AERC Senior Policy Seminar IX. African Economic Research Consortium (AERC), Nairobi :Kenya, pp 201-304.

Okello, D.K., Birumal, M., and Deom, C.M. (2010). Overview of groundnuts research in Uganda: Past, present and future.

Olowe, V.I.O., Adeyemo, Y.A. and Adeniregun, O.O. (2009). Sesame: the underexploited organic oilseed crop. Journal of Science and Sustainable Development. 2 (1)

Practical Action (2010). Sustainable Livelihood through Agro Processing" retrieved on 18/1/11 from *http://practicalaction.org/food-production/agroprocessing*

Porter, M.E. (1985). Competitive Advantage .New York the Free Press, pp 43-59.

Porter, M.E., (1980). Competitive Strategy, free press, New York,pp 95-117.

Purseglove, J.W. (1968). *Tropical Crops: Dicotyledons*. Longman, Harlow, pp 15-30.

Salau, E.S. and S.A. Rahman (2007). Gender Analysis of Accessiblity to Farm Resources among Small Scale Farmers in Lafia Area of Nasarawa State of Nigeria. *Journal of Agricultural Extension*, 1(10):62-78.

Sikuku, E.M.D., and Ogemah,V. (2005). Improving smallholder marketing of potatoes and groundnuts in Eastern Uganda. A consultancy report to AT-Uganda.

Suleiman, M. L. (2002). Operation and Maintenance of IAR Groundnut Extraction Machines. Paper presented at a workshop on groundnut oil processing in collaboration with women co-operative groups. IAR – SAFGRAD/USAID project.Conference Hall IAR/ABU, Zaria, 12th July, 2002.

The Abuja Security and Commodity Exchange. Retrieved on 25/5/12 *http://www.abujacomex.com/pages/posts/the-agricultural-policies-of-the-nigerian*-government517.php.

Technical Centre for Agriculture (CTA), (1993). A woman's rightful place. Spore bi-monthly bulletin. Technical Centre for Agricultural and Rural Cooperation (CTA), Netherlands, pp 44.

Trade Investment Nigeria (2010). "Invest in the processing of groundnuts". *Investment opportunities in Nigeria*. Retrieved on 25/5/12 from *www.tradeinvestnigeria.com/investment_opportunities/944416.html*

United State Department for Agricultural Development.(USDA) (2008) *Oilseeds: World Markets and Trade. http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1490*

United State Agency for International Development (USAID) (2009). Regional market assessment, Uganda Livelihood and Enterprises for Agricultural Development (LEAD).

Wanyama, R.N., Mshenga, P.M., Orr, A., Christie M.E. and Simtowe F.P. (2013). A Gendered Analysis of the Effect of Peanut Value Addition on Household Income in Rongo and Ndhiwa Districts of Kenya. International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) Kenya.

Weber, C.M (2009). Building Competitiveness in Africa's Agriculture: A Guide to Value Chain Concepts and Applications. The World Bank, Washington, DC.

Yahaya, K.M. (2002). Women in Agriculture: Gender and Communication Variables in Agricultural Information Dissemination in Two Agro Ecologial Zones of Nigeria. University of Ibadan Research Monographs. Corporate Graphics Limited Ibadan. Nigeria, p. 4.

Yayock, J.Y.(1977). An Epidemic of Rosette Disease and its Effect on Growth Characteristics and Yield of GSroundnuts in Nigersia (Summaries in Es, Fr,) *Oleagiaeux* 32(3): 113-115.

APPENDIX

M.Sc. Research Questionnaire for Groundnut Value Chain Actors

SURVEY ON ROLES OF WOMEN IN GROUNDNUT VALUE CHAIN IN KANO STATE, NIGERIA.

Dear Respondent,

This questionnaire is from a student of the Department of Agricultural Economics and Rural sociology, Ahmadu Bello University, Zaria. Please, fill as appropriate. All information will be treated with confidentiality and strictly for the purpose of research. Thanks for your co-operation.

Nafisat Aliyu

INPUT DEALERS

1. Location address:_____
2. GSM No _____ Email address:_____
3. Name of Respondent:……..... ……
4. Sex: Male [ ] Female [ ]
5. Age:……
6. Marital Status: Single [ ] Married [ ] Widow [ ] Divorced [
7. Family Size: _____

8. Highest Educational Status:
    a. Qur'anic Education [ ]
    b. Primary School Education [ ]
    c. Secondary School [ ]
    d. Tertiary Education [ ]
    e. Others (Specify)_____
9. Number of years spent in school_____
10. How many years have you spent in inputs supply/trading?
11. Is input trading your Primary occupation? Yes ( ) No ( )
12. What are the materials used in your operation?

Inputs name	Quantity used	Price per unit

13. What are the intermediary outputs or services of your operation?

Intermediary product	Quantity used	Price per unit

14. What are your final products?

Final output	Quantity	Price per unit

15. If yes, what is your secondary occupation? ……

16. Are you a member of Rice inputs dealers Association or Union: Yes [ ] No [ ]

17. What are the benefits obtained from marketers association?

a. Loan /Grants/Financial assistance[ ]
b. Bulk purchase [ ]
c. Market information [ ]

d. Bulk transportation [ ]

e. Training [ ]

f. Others (specify) _____

18. What groundnut inputs supply are you involved in?

a. Fertilizer [ ]

b. Seeds [ ]

c. Agro chemicals [ ]

d. Water pumps [ ]

e. Sprayers [ ]

f. Others

(Specify)_____

19. Source of Start off capital.

a. Personal saving [ ]

b. Loans [ ]

c. Grants [ ]

d. Family / Relatives [ ]

20. Do you have access to credit? Yes ( ) No ( )

21. If Yes to 13 above what are your sources of credit

i. Commercial Bank ( )

ii. Friends/relatives ( )

iii. Local lenders ( )

iv. Agric bank ( )

v. Others (specify) ……

22. Did you receive any training on input trade? Yes ( ) No ( )

23. If yes, how much training have you undergone so far?.....

24. If Yes to 23 What is your source of training

a. ADP [ ]

b. Universities [ ]

c. NGOs [ ]

d. Association [ ]

e. Company [ ]

f. Marketer [ ]

g. Others

(specify)_____

26. How often do you update your trading knowledge?

a. regularly ( ) b. not regularly ( ) c. not at all ( )

27. Name the organization(s) that gives you training on input trading?

i. …….

ii. …….

iii. ……

iv. ……

28. Where do you obtain your inputs from?

i. Direct from the company

ii. Regional dealer

iii. Wholesalers

iv. Others specify …….

29. What type of storage facility do you use?

a) Ware house ( ) c) Shop ( )

b) Store ( ) d) Others specify

……..…..

30. How much do you pay for storing your products per year

N?……

31. What is the distance between your shop and

supplier?…… Km

32. How much does it cost to transport the product from the supplier to your shop

N...…

33. How do you deliver your services/goods to your clients?

a. Sales on credit to farmers

b. Link farmers with processors

c. Provide training to farmers

d. Provide extension services

e. Deliver products to farmers

f. Others (specify)

.34. What challenges(s) do you face in your inputs supply business?

i. ……

ii. ……

iii. ……

iv. ……

35. Suggest way(s) of addressing the challenges

a……..

b……

c……

d……..……

e…….....

FARMERS

Section A; Household characteristics

1. Name; ……..
2. Age; ……
3. Marital Status;
   i. Married [ ]
   ii. Single [ ]
   iii. Widow [ ]
   iv. Divorced [ ]
4. Household size……..

5. Household Distribution;

	MALE	FEMALE
Adult		
Children		

6. Relationship of informant to household head; I. Self [ ] ii. Child [ ] iii. Spouse [ ]

iv. Others, specify……..

7. Highest educational attainment of household head
   i. Qur'anic education [ ]
   ii. Primary education complete [ ]
   iii. Secondary education complete [ ]
   iv. Tertiary education [ ]
   v. Others, specify……..
8. Number of years spent in school……..

9. Major Occupation
   i. Farming [ ]
   ii. Civil Servant [ ]
   iii. Trading [ ]
   iv. Processing/Milling [ ]
   v. Others, specify……..
10. Income/year of household head from groundnut production in
    i. 2012……..
    ii. 2013……..
11. Income from Groundnut production in
    i. 2012……..
    ii. 2013……
12. Groundnut output (kg) per year……

13. Other occupation Income/year [N]
14. Are you a Member of farmers' organization? Yes……. No……..
15. If yes, Number of farmer organization [ ]
16. What benefits derived from being the member of the groups.
    i. Loan [ ]
    ii. Inputs [ ]
    iii. Education [ ]
    iv. Other specify……..
17. Number of time attended training on groundnut production?……

Section B; Production

18. Years of experience in Groundnut farming [……]

19. Total farm size owned [m or h][note a football field =825ha =8250m ; 1ha =10000m]……
20. Is the Land area diverted to groundnut production only i. Yes [ ] ii. No [ ]
21. Land ownership status
    i. Inheritance [ ]
    ii. Purchase [ ]
    iii. Gift [ ]
    iv. Rent [ ]
    v. Others, specify……
22. Average groundnut paddy yield per ha
    i. 2012…….
    ii. 2013……
23. What type of fertilizer used on the land?
    i. Urea
    ii. NPK
    iii. Manure
24. Sources of the fertilizer?
    i. Government
    ii. Market
25. Quantity of fertilizer per kg……
26. Price of fertilizer per kg……
27. What type of herbicide/pesticide used……..
28. Sources of the herbicide/pesticide?
    i. Government t
    ii. Market
29. Quantity per kg or L……..
30. Price per kg or L…….
31. Are you aware of any groundnut variety? i. Yes [ ] ii. No [ ].
32. If yes which among the variety did you prepare most?.....
33. Is the variety
    I. Available a) Yes [ ] b) No [ ]
    II. Affordable a) Yes [ ] b) No [ ]
34. Input supply situation

	Distance to source (km)	Reliability Reliable (1) Not reliable (2) Don't know (3)	Quality Good(1) Poor (2) Don't know (3)	Quantities Adequate (1) Inadequate (2) Don't know (3)	Affordability Yes (1) No (2) Don't know (3)	Timeliness Adequate (1) Inadequate (2) Don't know (3)
Local seeds						
Improved variety						
Fertilizer						

Herbicides						
Pesticides						

35. Method of harvesting i] Hand tools ii] Mechanized

36. Groundnut production, consumption and sale

Year	Quantity produce per unit area	Quantity sold/stored	Price per unit	Quantity consumed	Quantity sold
2012					
2013					

37. Tick in order of importance the major problems limiting increased Groundnut production

i. Market
ii. Seeds
iii. Fertilizer
iv. Capital
v. Machinery
vi. Herbicides/pesticides

38. Do you have access to Groundnut Market information i. Yes [ ] ii. No [ ]

39. If yes, provide information below

Source of market information	Reliability 1=reliable 2=unreliable	Quantity 1= adequate 2=inadequate	Quality 1=current 2=Belated 3=not useful

40. Where did you market your groundnut?

i. Farm gate
ii. Rural market
iii. Urban market
iv. Regional market
v. International market
vi. Others, specify…….

41. List Major problem encountered in marketing your Groundnut produce in order of importance

i. …….

ii. ……

iii. …….

iv. ……

v. ……

42. Are you satisfied with the Marketing channel for Groundnut? i. Yes [ ] ii. No [ ]

43. Did you received any credit i. Yes [ ] II. No [ ]

44. If no to question 34, tick appropriate reasons

I. Not needed. [ ]

II. Too expensive. [ ]

III. Not available locally. [ ]

IV. Difficult to obtain. [ ]

V. Others, Specify…….

45. Access to credit

i. Family and Friends
ii. Government
iii. Banks
iv. Others, specify…….

46. Production and Transaction cost

S/NO	**Farm preparation**		
		2012	2013
1	Land Preparation		
2	Planting		
3	Fertilizer application		
4	Weeding		
5	Spraying		
6	Harvesting		
7	Irrigation cost		

8	Harvesting	
9	Bird scaring	
10	Thrashing	
11	Winnowing	
12	Bagging	
13	Transportation	
14	Storage	
15	Insurance	
16	Communication	
17	Legal fees	

47. Did you received any extension support i. Yes [ ] ii. No [ ].

48. Was the support adequate i. Yes [ ] ii. No [ ]

49. if yes, what type of extension……

50. Has your community experienced rural-urban migration i. Yes [ ] ii. No [ ]

51. If yes, what proportion of population migrated……

52. What type of migration?

i. Seasonal [ ]
ii. Temporal [ ]
iii. Permanent [ ]

53. Describe the trend in the last 5 years

i. Low [ ]
ii. Moderate [ ]
iii. High [ ]

54. Possible reasons for migration

i. Lack of jobs [ ]
ii. Lack of farming infrastructure [ ]
iii. Lack of good wages [ ]
iv. Others [ ]

55. Is there any relationship that exist between you and marketers or processors

i. Yes [ ] ii. No [ ]

56. If yes, which type of relationship? Choose from the following;

i. Provide Future Markets
ii. Linkage to buyers and credit providers
iii. Linkage to input suppliers

57. Who among the two is the most important to you?

i. Marketers
ii. Processors

58. If no relationship, do you want a relationship to exist

i. Yes [ ] ii. No [ ]

59. What is your perception of the importance of the following actors?

i. Consumers	[ ]	Key
ii. Transporters	[ ]	1= Less important
iii. Whole sellers	[ ]	2= Important
iv. Retailers	[ ]	3= Very important
v. Local Processors	[ ]	4= Inevitable
vi. Industrial Processors	[ ]	
vii. Financial Institutions	[ ]	
viii. Cooperatives	[ ]	
ix. Input Suppliers	[ ]	

60. What are the constraints affecting production?

i. ……
ii. ……
iii. ……..
iv. ……..
v. …….

61. What are the possible ways through which production can be improved?

i. ……..
ii. ……
iii. ……..
iv. ……
v. ……

PROCESSOR

1. Local government area……
2. Community……
   ……
3. Location address; Telephone no; Email address…….
4. Enumerator……
   ……
5. Date……
   …

ACTORS

1. Marketers.
2. Transports
3. Processors.
4. Consumers.
5. Consumers (corporate)
6. Input Dealers.
7. Farmer / Producer

SECTION A; DEMOGRAPHIC DATA ON MANAGER

6. Years of operation…….
7. Marital status; (i) Single [ ] (ii) Married [ ] (iii) Widow [ ] (iv) Divorced [ ]
8. Age ……
9. Family size……
10. Educational Status;
    i. Qur'anic education

    ii. Primary education

    iii. Secondary education

    iv. Tertiary education

    v. Others (specify)……..

11. Number of years spent in school……

12. Do you Belong to any Processors Association i. Yes [ ] ii. No [ ]

13. If yes what are the benefit of belonging to the association.
    Possible benefit
    i. Access to credit
    ii. Market Access/Link
    iii. Education/ Training
    iv. Others (specify)…….
14. How many employees do you have……

SECTION B; PROCESSING ACTIVITIES

15. What is the name and model of your groundnut processing machine
    i. Traditional method
    ii. Manual or electrical method
16. What is the source of equipment?
    <u>List type of processing equipment</u>
    i. Mortar and Pestle
    ii. Groundnut Roaster
    iii. Groundnut Polisher
    iv. Manual Groundnut Oil Extractor
    v. Motorized Groundnut Oil Extractor
    vi. Industrial method such as hydraulic and screw presses or solvent extractor
17. Are you aware of any groundnut variety? i. Yes [ ] ii. No [ ]
18. If yes, which among these varieties that has high oil content did you prepare?
    i. SAMNUT 10

ii. SAMNUT 11
iii. SAMNUT 14
iv. SAMNUT 21
v. SAMNUT 22
vi. SAMNUT 23

19. What are the sources of supply?
    i. Farmers/own farm
    ii. Market
    iii. Marketers
    iv. Others (specify)……
20. What levels of processing are you involved in
    i. Boiled groundnut [ ]
    ii. Roasted groundnut [ ]
    iii. Groundnut cookies [ ]
    iv. Groundnut pap (kunun gyada) [ ]
    v. Groundnut stew (taushe) [ ]
    vi. Groundnut oil [ ]
21. If groundnut oil only, what quantity of groundnut oil extracedt per week.
        i. At peak period……
        ii. At lean period……
22. What is your Installed Capacity per day……..
23. What is the Average of your Operational Capacity per day……..
    i. Peak period
    ii. Lean period
24. Ownership of the extracted machine
    i. Self /purchased
    ii. Leased
    iii. Hired Labor
    iv. Inherited
    v. Others specify……
25. If purchased, what is the sources of fund for machine purchase
    i. Personal saving
    ii. Loan
    iii. Grant
    iv. Others specify……
26. Did you use loan to buy any of the Machine. i. Yes [ ] ii. No [ ]
27. If yes, What is the source of the Loan
    i. From group
    ii. From government
    iii. Banks
    iv. Family/relatives
    v. Money lenders

vi. Others specify……..

28. What is the amount of the Loan taken N……
29. What is the interest rate on the loan? .....% equivalent to N…….
30. Is there Moratorium on the Loan i. Yes [ ] ii. No [ ].
31. What is the time of payment
    i. Within a year [ ]
    ii. Within 2 years [ ]
    iii. Within 3 years [ ]
    iv. Others, specify…….
32. Have you received any assistance from the government or international organization in the last 2 years i. Yes [ ] ii. No [ ]
33. Have you received any assistance from the
    i. Local government Authority
    ii. State government
    iii. Federal government
    iv. Others, specify…….
34. If yes, what type of assistance;
    a. Money
    b. Training
    c. Advice/information
    d. Market linkage
35. What is the average income per day during:
    i. Peak period [ ]
    ii. Lean period [ ]
36. What is the average expenditure on your processing activities per day during
    i. Peak period [ ]
    ii. Lean period [ ]
37. What is your average income per year? N……..
38. Please break the expenditure into their various components;
    i. Operational [ ]
    ii. Utility (water, electricity) [ ]
    iii. Wages and salaries [ ]
    iv. Taxes and rent [ ].
    v. Others, specify …….
39. State the peak period and slack period of your operation;
    i. Peak period [ ]
    ii. Slack period [ ]
40. What are the source of energy:
    i. Electricity [ ]
    ii.Diesel/petrol [ ]
    iii. Solar [ ]
    iv. Fuel wood [ ]
    v. Others, specify…….
41. Who are your targeted buyers?

i. Within the community [ ]
ii. Regional market [ ]
iii. Urban market [ ]
iv. International market [ ]
v. Others, specify……

42. Please rank these constraints affecting your processing activities
High cost product [1]
Inadequate/lack of market [2]
Inadequate/lack product [3]
Lack of paddy consumers [4]
Others, please specify…….
43. Suggest ways of mitigating the challenges mentioned above.
i. ……
ii. ……
iii. ……
iv. ……
v. ……

MARKETERS

Socio-Economic Characteristics/Demographics of Marketers

1. Local Government Area: …….
2. Community: ……
3. Date: ……..
4. Name of Respondent: ……. GSM: …….
5. Age: ……..
6. Marital status……
7. Literacy Level
   i. Qur'anic [ ]
   ii. Non-formal [ ]
   iii. Primary [ ]
   iv. Secondary [ ]
   v. Tertiary [ ]
   vi. Others, please specify……..
8. Number of years spent in groundnut marketing…….
9. Type of marketer; Whole seller [ ] Retailer [ ] others specify……
10. Source of start-off capital
    i. Personal saving
    ii. Loans
    iii. Grants
    iv. From family and friends

11. Source of supply: Farm gate [ ] Rural Assemblers [ ] Wholesalers [ ] Middlemen [ ] Others specify……..
12. Membership of Groundnut Marketing Association or Union: Yes [ ] No [ ]
13. If yes, what benefit do you derive from the association
    i. Grants, loan and training
    ii. Collective marketing
    iii. Collective transportation
    iv. Market information
    v. Others specify……
14. Do you have storage facilities in the market? Yes [ ] No [ ]
15. Who owns the storage facilities
    i. Self
    ii. Association
    iii. Government
    iv. Others specify……
16. Do you have access to the storage facilities? Yes [ ] No [ ]
17. What is the capacity of the storage facilities? [tons]
18. How much is charged per bag in a week?
19. Do you have access to Extension services on groundnut marketing? Yes [ ] No [ ]
20. What is the source of the Extension information?
    i. Radio [ ]
    ii. Television [ ]
    iii. I C T [ ]
    iv. Others specify……
21. What is your average income per annum from groundnut marketing?
22. What quantity of groundnut in bags do you sell per week?
23. What is the price per bag?
24. What is your associated
    i. Marketing cost per week?
    ii. Transportation cost per week?
    iii. Tax paid per week?
    iv. Loading and off-loading cost per week?
25. Name and type of market

    Rural ……

    Semi-urban……

    Urban……

    Regional……

Constraints

26. Market constraints

    Poor market [1]

    Poor storage facilities [2]

    High cost of transportation [4]

High taxes [5]
Price fluctuation [6]
Lack of credit facilities [7]
Security challenges [8]

CONSUMERS

Socio-Economic characteristics of consumers (Household) of processed groundnut

1. L G A……
2. Community/District…….
3. Name of respondents……..
4. Age……
5. Literacy level
   i. Qur'anic [ ]
   ii. Primary [ ]
   iii. Secondary [ ]
   iv. Tertiary [ ]
   v. Other, please specify……..
6. Marital status? single [ ] married [ ] divorced [ ] widow [ ]
7. Household size

S/N		Male	Female	Children
	Who head the family			
	Number of households			

8. Consumer type; Urban [ ] Semi-urban [ ] Rural [ ]

Others ……..

9. Monthly income (N)…….

Groundnut Consumption Details

10. Which among this processed groundnut did you consume most?
    i. Boiled groundnut [ ]
    ii. Roasted groundnut [ ]
    iii. Groundnut cookies [ ]
    iv. Groundnut pap (kunun gyada) [ ]
    v. Groundnut stew (taushe) [ ]
    vi. Groundnut oil [ ]
11. Source of the processed groundnut : Purchase [ ] Gift [ ] Home production [ ]
12. Price of the processes groundnut per mudu/tiya:
    i. Boiled groundnut [ ]
    ii. Roasted groundnut [ ]
    iii. Groundnut cookies [ ]
    iv. Groundnut pap (kunun gyada) [ ]
    v. Groundnut stew (taushe) [ ]
    vi. Groundnut oil [ ]
13. Frequency of groundnut consumption per week: harvest season [ ] and off-season [ ]
14. Quantity consumed per week:
    i. Boiled groundnut [ ]
    ii. Roasted groundnut [ ]
    iii. Groundnut cookies [ ]
    iv. Groundnut pap (kunun gyada) [ ]
    v. Groundnut stew (taushe) [ ]
    vi. Groundnut oil [ ]
15. Consumer preference
    Boiled groundnut [1]
    Roasted groundnut [2]
    Groundnut cookies [3]
    Groundnut pap (kunun gyada) [4]
    Groundnut stew (taushe) [5]
    Groundnut oil [6]
16. Reasons for the preference above
    i. Cost [1]
    ii. Availability [2]
    iii. Taste [3]
    iv. Ease for cooking [4]
    v. Ease for eating [5]

Constraints

17. Please rank these constraints affecting consumption
    High cost
    Inadequate market information
    Inadequate product information
    Non availability

    Others, please specify

CORPORATE CONSUMERS

Socio-Economic characteristics of groundnut consumers (corporate)

1. L G A……
2. Community/District……..
3. Name/Type of Corporate Entity…….
4. Phone number of the respondent……
5. Who consume the groundnut most: Male [ ] Female [ ]
6. Size of Groundnut Consumers: Male [ ] Female [ ] Children [ ]

Groundnut Consumption Detail

7. Sources of the consumed groundnut per week: Purchase [ ] Gift [ ] Corporate production [ ]
8. Price of the processed groundnut per tiya/mudu or bottle:
   i. Boiled groundnut [N]
   ii. Roasted groundnut [N]
   iii. Groundnut cookies [N]
   iv. Groundnut pap (kunun gyada) [N]
   v. Groundnut stew (taushe) [N]
   vi. Groundnut oil [N]
9. Form in which processed groundnut is consumed: Cooking [ ] Eating [ ]
10. Frequency of groundnut consumption per week: Harvest season [ ] Off-harvest [ ]

11. Quantity consumed per week [ ] tiya/mudu or bottle
12. Consumer preference:
    Boiled groundnut [1]

Roasted groundnut [2]
Groundnut cookies [3]
Groundnut pap (kunun gyada) [4]
Groundnut stew (taushe) [5]
Groundnut oil [6]

13. Reasons for the preference above
    vi. Cost [1]
    vii. Availability [2]
    viii. Taste [3]
    ix. Ease for cooking [4]
    x. Ease for eating [5]

Constraints

14. Please rank these constraints affecting consumption
    High cost [1]
    Inadequate market information [2]
    Inadequate product information [3]
    Non availability [4]
    Others, please specify…….