ANALYSIS OF CASSAVA PROCESSING AND UTILIZATION IN BOSSO LOCAL GOVERNMENT AREA OF NIGER STATE

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DEDICATION

The project is dedicated unto God Almighty and our parent, brothers and sisters, whose financial and moral support are immeasurable.

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With special thanks to God Almighty who gave us live and strength to start and complete this work.

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ABSTRACT

The research work centered on analysis of training needs of cassava processors in Bosso local government area of Niger state. The specific objectives are to assess the socio-economic characteristics of cassava processors, to identify the training undergone so far in cassava processing, to identify the training needs of cassava processors, to ascertain the income realized/month by the processors and to identify the constraints militating against cassava processors in the study area. A random sample of 160 respondents was taken with structured questionnaire. Descriptive statistics were used to describe the socio-economic characteristics and to identify training needs of cassava processors. The average income realized per month was 116,064.76k and quantities product/month were674kg. major problems militating against cassava processors were capital (83.8%), storage facilities (78.8%), and stress (98.8%). ANOVA shows a significant relationship between income generated and the training needs of cassava processors, (F=11.466,p<0.05) and Chi-Square indicated that there was significant relationship between the number of training need and age (x^2=19.813^a, P<0.05) while there was no significant relationship between the number of training needs and education level (x^2=14.997^a, p<0.05). it was recommended that Cassava processors should be given to processors on how to operate and maintain their machineries.

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CHAPTER ONE

1.0 Introduction

1.1 Background of Study

Nigeria is an agrarian society with about 70 percent of her over 140 million populations engaged in agricultural production (NBS/CBN,) 2006). Agriculture is therefore, the most assured engine of development and a reliable key to industrialization. Since the discovery of petroleum in commercial quantities in Nigeria, its importance to the Nigerian economy had been increasing. But, in spite of the huge, but ephemeral revenue derived from petroleum, agriculture remains the cornerstone of the Nigerian economy (Igboeli, 2000). The contribution of Agriculture of the GDP was from 34.62 to 35.84 percent for the period 2000 – 2004 (CBN, 2004). Nigerian agricultural production is operated by a large number of small producers with little capital, who produce more than 90 percent of the total food crops (CBN, 1995).

The objectives of Nigeria's Agricultural Policy include the achievement of food self-sufficiency and food security, generation of gainful employment, increased production of raw materials for industries, increased production and processing of export crops, rational utilization of agricultural resources and the promotion of increased application of agricultural technology for the improvement in the quality of life of its citizens (CBN, 2004). To achieve this, the Federal Government of Nigeria (FGN) in 1999 pledged to support the agricultural sector and announced the need for immediate action in five agricultural sub sectors; cassava, rice, vegetable oils,

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livestock and tree crops. In view of the potentials derivable from cassava; the presidential cassava initiative was introduced in 2002. This necessitated the plan to diversify the economic base of the country via cassava export. This therefore, informed the policy direction of the government to develop an expert market for cassava-based animal feed. Export prices of superfine cassava starch from Thailand are about $225 per tonne, and the Federal Government of Nigeria also hopes to benefit from cassava export. The govenrment'sestimate was that cassava would fetch about 15 billion naira (US1\$ = ₦127) per annum if optimally explored. The cassava imitative sought to generate UD\$5 billion is export revenue by year 2007. The cassava initiative also included the introduction of a mandatory 10 percent of cassava flour content policy, for local consumption, of confectionery and bakery products which was introduced in 2005.

The new partnership for African Development (NEPAD) in its pan African Cassava initiatives, defined cassava as a poverty fighter in Africa (NEPAD 2004) and the Global Cassava Development Strategy, an initiative facilitated by IFAD and FAO, recognizes the importance of processing fresh roots to product secondary products, such as starch, within a market-driven, commodity chain approach. The global demand for cassava starch has increased over the past 25 years but only Thailand has achieved the transition of cassava from a staple food to products and raw materials for the processing industry. Through the cassava initiatives, Nigeria also intends to follow suit.

1.2 Importance of Cassava

Cassava, (Manihotesculentacrantz), is a perennial, vegetative propagated shrub, grown throughout the lowland Tropics. Originating in Tropical and Sub-Tropical areas of Central and South America, cassava arrived in Africa at the end of the sixteenth century. In terms of calories consumed, cassava is Africa's second most important staple food after maize, (Nweke et al; 1999). As a crop, cassava has advantages over other crops. Cassava has higher yields per hectare, is tolerance to drought and degraded soils, and has great flexibility in its planting and harvesting. As a source of starch, it is highly competitive: the root contains more starch, by dry weight, than almost any other food crop, and the starch is easy to extract using simple technologies. Cassava is a staple food for more than 200 million people in the tropics. The crop is amenable to agronomic as well as genetic improvement, has a high yield potential under good conditions and performs better than other crops under suboptimal conditions. In the early 1960s, Africa produced half of the world cassava output, primarily because Nigeria and Ghana increased their production fourfold. In the process, Nigeria replaced Brazil as the world's leading cassava producer and has retained the position up to date. As a food crop, cassava fits well into the farming systems of the small holder farmers in Nigeria because it is available year round, thus providing hours hold food security.

The FAO, (2003) estimated cassava production in Nigeria in 2002 to be approximately 34 million tonnes. On a per capital basis, North Central is the highest producing state at 0.72 tonnes/per person in 2002, followed by South East (0.56), South South (0.47), South West (0.34), North West

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(0.10) and North East (0.10). National per capita production of cassava is 0.32 tonne/per person (IITA, 2004).

1.3 The Impact of Training in Agricultural Development

The functions of agricultural training are closely meshed with the process of agricultural development. Training is the process of continuous education which aim to develop knowledge and skill to enable people especially in the country side to solve their problem by their own effort (Glasudin, 1992).

It is trough training that farm families in rural Nigeria are informed of new method of Agricultural production, new patterns of family living/rural welfare and nutrition.

The Agricultural Development Programme (ADP) uses the training system of extension and had three main components.

1. Technical service including on the Farm Adaptive Research (OFAR).
2. Message formulation commercial service to distribute inputs.
3. Infrastructural development responsible for land clearing and preparation, irrigation and drainage and road construction and maintenance (Farinde, 1996).

The ADP philosophy is based on the premise that a combination of factors comprise right technology, effective extension, access to physical input, adequate market and complementary infrastructural facilities are essential to get agricultural moving and to improve productivity in rural dwellers.

FAO (1993) reported that among all training the number of women is lower in agriculture. Training is male oriented and of all the world's training agent, 15% are women (Dunn, 1995)the low number of women as a training is one of the main constraint of agricultural development in Nigeria. Various attempt at improving the productivity of the rural farmers have focus and emphasized on the roles, responsibilities, constraints and benefit female farmers while impact of rural women farmers in agricultural production have not been recognized.

Therefore the improvement of women access to agricultural research and extension service must begin with the analysis of men and women participation in agricultural production process. This can be view in two related dimension i.e their role ·in agriculture and in the household. Considerable effort should be directed at solving the constraints of the cassava processors so as to increase the productivity in the programme and planning of agricultural development in country by policy maker and agricultural administrators.

1.4 Problem Statement

Cassava is one of the most important crops in Nigeria most widely grown in the southern part of the country, in terms of area devoted to it and member of farmer processing it. it's increase importance in the middle belt in recent years and it realization in all parts of the country as a popular food cash crop has made it fast replacing yam and other traditional staple of the area. Despite the rapid production and increasing consumption of it's product, cassava processors are still constrained by inadequate investment

in cassava processors are still constrained by inadequate investment in cassava processing as well as the need to mechanize the processing of cassava especially into product such as chips, pellets, garri, flour, etc, in order to reduce losses using the traditional method in processing cassava.

The fluctuation observed in the demand and supply of cassava products that tends to pitch their prices at level beyond the common man are mostly due to unplanned economy coupled with lack of amenities for it processing and preservation. (IITA, 1990a).

The future of cassava in the study are depends very much on development on technology processing of cassava. This study therefore tends to answer the following research questions.

1. What training needs have processors undergone so far?
2. What other training is needed in processing cassava?
3. What are the socio economic characteristics that influenced cassava processing?
4. Is cassava processing profitable?
5. What are the constraints militating against cassava processing?

1.5 Objectives of Study

The broad objective of the study is to analyze the training needs of cassava processors in Bosso LGA of Niger State.

The specific objectives are to:

1. Describe the socio economic characteristics of cassava processors in the study area.

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2. Identify the training undergone so far in cassava processing
3. Identify the training needs of processing cassava.
4. Ascertain the income realize/month by the processors.
5. Identify the constraint militating against cassava processors in the study area.

1.6 Hypotheses of Study

Hypothesis 1: There is no significant relationship between the income generated from cassava processing and training needs of cassava processors.

Hypothesis 2: There is no significant relationship between the demographic (Age and Education level) characteristics and the number of training needs of cassava processors.

1.7 Justification of the Study

This study aimed at contributing to the existing knowledge about cassava processing and to suggest ways in which available resources can be put together to improve the processing of cassava in the study area. It also hoped that this study will fulfill the need for data generation to the grass root which will serve as guide for future formulation of government policies. The study will provide suggestion and recommendation on ways in which available resources can be put to effective and efficient use as well as enhancing adoption of improved practices.

2.0 LITERATURE REVIEW

2.1 Concept of Training

The oxford English Dictionary defines training of a person for some particular profession. Training is therefore a learning experience that seeks a relatively permanent change in an individual that will improve his or her ability to perform on the job.

Training is regarded as a systematic and planned process to change the knowledge, skill, and behavour of personnel to achieve the objective of the organization they worked for.

Lomas, (1999) says, training is task oriented because of the work and individual perform job description. or task requirement of a particular job are used to determine the nature of the training programme. Therefore training is directed at improving one's job performance in an organization. Training is conducted as a result of technology innovation when current work standard are not being maintain and when such situation are ascribed to lake of knowledge and or skills among individual personnel in an organization.

Training is therefore more specific, job oriented and usually a short duration. Diversity of job opening calls for adequate training to enable the farmer to cope with the demand of various job options. Training is a key element of the system to keep the farmers current on latest innovation

suited to changing farming condition. (Lomas, 1999). There should be a constant training of extension worker in information management.

2.2 Training needs of agro-processors

Training needs is the difference between what is and what ought to be. (Leagan, 1971).These implies the gap between the two conditions i.e what the farmer knows and what he is expected to known.

Training need is define as skill, knowledge and attitude an individual requires in order to overcome problems as well as to avoid creating problem situations (Proctor and Thorthon, 1961). According to Aina (1990) training need by Nigeria farmer is not agricultural information resources, but the management of these resources such as agricultural information personnel, versed information resources, but the management of these resources such as agricultural information personnel, versed information science, information technology and management and capable of using modern techniques in information resources management of offer value added information for decision making, planning and policy formulation.

Adesoji el al; (2006), assessed the training needs of cassava processors (farmers) for future agricultural extension work development in Osun State Nigeria. The study identified the areas of training need by cassava processors as training of women on how to operate their machines, cost minimization, processing of gari to different granulated forms, storage facilities in order to enhance long shelf life for product like gari, eluboetc and also the training on processing cassava into raw materials which could serve as export trade.

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2.3 Gender Roles in Agricultural Processing

It is now widely demonstrated that rural women as well as men throughout the world are engaged in a range of productive activities essentials to household welfare, agricultural productivity and economic growth, yet women's substantial contribution continues to be systematically marginalized and undervalued in conventional agricultural, economic analysis and policy while men contribution remain the central focus attention (Ajayi 1995).

According to Samanta (1994) women are typically and wrongly still characterized as" economically inactive" in statistical survey in agriculture, a result that tells us more about survey methodology than about reality. Agricultural training services still don't attach much importance women farmers or women on the farm. Policy maker and administrations typically still assume (in the face of empirical data) that men are the farmers and women play only a supportive role as farmer wives.

"Gender" is a term often associated with roles and responsibility of males and females in the society as a social classification of sex. It is the socio – cultural differences between males and females as against the biological difference (Sinkaiye, 2005). The interrelations of these roles produce a mutual understanding of each other's capabilities and constraints at different stages of life.

"Gender" is a concept used in social science analysis to look at roles and activities of men and women (IITA, 1996). Thus, the focus of gender analysis is not biological difference between men and women but rather

one their experiences as members of society. Gender roles give us insight into issue affecting women and it is focused mainly on the relationship of both men and women to the social and economic structure of a society.

Over the years, it is believed vegetables, groundnuts and cassava while yam and tree crops such as cocoa and palm produce are said to be men's (Ajayi, 1995). Adegeye et al (1999) also asserted that women are active in the cassava industry and that they are more predominant in the processing and marketing than men folk who dominate the production of cassava roots.

Cassava processing is carried out by men and women but mostly by women. Men get involve in cassava processing where grating and pressing of cassava are mechanized and also cassava is a cash crop for urban consumption while women do the peeling, washing a toasting job in gari production. (Asadu and Nweke 1999). But in some villages in Nigeria where cassava processing has not been mechanized women do al the processing task while men focus on cassava production. As the processing task become mechanized in Nigeria today, the contribution of men's labour to cassava processing increases because men operates all the processing machines while women shifted their labour to production of cassava such as weeding, harvesting and transportation etc. yet men still manage the mechanized processing task. (Asadu and Nweke 1999).

2.4.0 Socio Economic Factors

The main socio economic factor affecting cassava processing relate to inadequate resources allocation, infrastructure and extension service.

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2.4.1 Resource Allocation

The shortage of labour and capital are important constraint for cassava processing (IITA 1990s). recent trend indicate a decline in the rural farm population with the result that farm labour is scarce and expensive during critical periods. In terms of labour requirements, cassava processing is highly demanding as it requires detoxification before becoming edible. (UIFEM, 1990). Among the reason for labour shortages are young adult and women are migrating to the cities, children are at school during the period of peak labour demand and there are fewer farmers among the ageing population in the rural areas. According to IITA, (1990a).lack of capital means farmers cannot afford to hire labour, there is no institutionalized farm credit system to assist small farmers. These have result in limited farm size and investment in cassava production and processing. Theneed to developed improve processing facilities is particular important for cassava as it is highly perishable and requires processing before consumption.

2.4.2 Infrastructure

The necessary infrastructure, such as adequate water supply transportation and marketing system is generally lacking in cassava growing areas given the producers and processors little incentive to expend operations.

Ofori and Hahn (1991), suggested that processing industry must be located as close as possible to the production areas as transportation in Africa is costly. Root crops are bulky, handling and transporting them in their unprocessed state will cancel out any profit.

According to IITA (1990) an inefficient expensive transportation system adversely affects input/output cost and supply thus, reducing farmer's potential income from market their product. Efficient marketing is needed in order to get the product to the consumers at the right place and time, in the required farm and at affordable price.

2.5 Traditional Methods Processing of Cassava

The traditional method in use is Africa, probably originated from typically America, particularly north eastern Brazil any one may have been adopted from indigenous techniques for processing yam (Jones, 1999). These processing methods include; peeling, slicing, grating, soaking, fermentation, pounding, roasting, pressing, drying and million. Traditional, cassava roots are processed by different various methods, into different product andused in diverse ways according to local custom and preference to provide carbohydrate in diet. Specific combinations of these processing steps lead to a myriad of different cassava products with acceptable taste to a wide range of consumers. (Bokanga and Otoo, 1990).

2.5.1 Why Cassava needs processing

Fresh cassava roots cannot be stored for long because they rot within 3-4 days of harvest. They are bulky with about 70% moisture content, and therefore transportation of the tubers to urban markets is difficult and expensive. The roots and leaves contain varying amounts of cyanide which is toxic to humans and animals, which the raw cassava roots and uncooked leaves are not palatable. Therefore, cassava must be processed into various forms in order to increase the shelf life of the products, facilitate

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transportation and marketing, reduce cyanide content and improve palatability. The nutritional status of cassava can also be improved through fortification with other protein –rich crops. Processing reduces food losses and stabilizes seasonal fluctuations in the supply of the crop.

2.5.2 Improved Cassava Processing Technologies

Processing is important for the marketing of cassava, and reduces the bulk, extends shelf life thereby reducing transportation cost. Fresh cassava roots have low value per unit weight; whereas processing adds value to it and therefore increases the market value. In addition, fresh roots of some cassava cultivars contain cyanogens which are reduced or eliminated through processing.

In response to growing labour shortages in Nigeria, researchers have developed a wide array of simple mechanical processing technologies that reduce labour requirements and facilitate the commercial production of cassava and it's processing into traditional food items. Research institutes such as Product Development Agency (PRODA), Federal Institute of Industrial Research Oshodi (FIIRO), and International Institute of Tropical Agriculture (IITA), as well as the Agricultural Engineering Departments in several Universities and Polytechnics in the country, have developed many mechanized units designed to remove the constrains that cassava processors face. Thus, several models and variations of mechanical cassava graters are available in the market (Taiwo, 2006). Graters powered by petrol or diesel engines are in general use, but not much success has been recorded towards mechanizing cassava peeling and gari frying (labour –

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intensive operations) at the household level. However, the industrial gari fryers developed by PRODA, FIIRO, and IITA are more suitable for use in large – scale commercial enterprises or cooperative organizations than at the household level. Equipment for milling cassava chips and grains also are available in the market (Adeniji et al., 2001; Taiwo et al., 2001). However, the adoption of cassava post harvest technology especially at the rural and peri-urban settings in Nigeria seems to be hampered by its fuel (energy) consumption. Most available cassava processing machines are driven by petrol, diesel or electrical energy, and for most rural households, these are scarce and expensive energy sources.

2.5.3 Challenges in Cassava processing

The transformation of cassava processing from the traditional food crop to an industrial raw material complements the shift of cassava production from as a low – yielding, famine reserve crop, to a high-yielding cash crop. However, the rate of cassava processing does not match the rate of its production in Nigeria, shows that high root yields attained through the adoption of improved cassava varieties would not have a substantial cost-saving advantage under manual processing technology (Nweke et al, 1999). There is therefore the need to mechanize the processing of cassava especially into products such as chips, pellets, flour, pancakes, adhesives, alcohol, and starch, which are vital raw materials in the livestock, feed, alcohol/ethanol, textile, confectionery, wood, food and soft drinks industries. These products are also tradable in the international market.

2.6.1 Cassava in Food Manufacturing

Technologies exist for wheat of cassava as a partial substitute for wheat in bread making and biscuits, pastries and snacks food manufacturer (Satin 1988, Eggleston and Omoaka 1994, Defloor 1995, and Onabolou et al; 1998). Use of cassava as a partial substitute for wheat in food manufacture will increase if the practice can result in a reduction in the prices of the same product made with 100 percent wheat flour. Using cassava flour for bread making for manufacture of biscuits, pastries and snacks food requires a reliable supply of cassava flour with constant quality (Defloor, 1995).

In Nigeria, the technologies for the use of cassava as a partial substitute for wheat flour in food manufacture that were developed at the IITA and other research centres were adopted by food industries when wheat industries when wheat industries when wheat flour was made scarce by the wheat import ban was removed in the mid 1990's the food industries readily reverted to the use of 100% wheat flour in food manufacture (Bokanga and Tewe, 1998).

Cassava starch as industrial raw materials, plant starches such as wheat, rice, corn, potato and cassava are used as industrial raw material in direct form or in number of derivatives forms.

CHAPTER THREE

3.0 Research Methodology

3.1 Study Area and Location

This study was carried out in Minna and Bosso Local Government Area of Niger State which was created on 3rd February 1976. Minna is located between latitude 3^{0}20 and 7^{0}40 East and longitude 14^{0}3 West, suitable for crop and animal production.

Bosso LGA is characterized by alternating dry and wet seasons with a mean annual rainfall ranging from 1000 to 1300mm. the average rainfall is 1100mm and spreads from late April or early May to late October (wet season) while the dry seasons set late October and ends in March. Bosso L.G.A are mostly 'Gwari and Hausa' by tribe, their major occupation is farming and some few government workers from different ministry and organization Minna is located between Chanchaga and Bosso.

Crop mostly cultivated are cereals such as guinea com, rice, millet and maize. Root and tubers such as yam, cassava, potatoes, oil seed and nut such as shea nut, groundnut and melon. Fruit such as mangoes, oranges, bananas, cashew and guava.Vegetable and sugarcane.

3.2 Population of study area

The population of Minna according to National Population Census (2006) was 3,950,249 million the records available from 2006 head count shows that Bosso Local Government Area has a population of 104,976 thousand persons.

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3.3 Sampling techniques and Sample size

Bosso Local Government is made up of districts two Bosso and Maikunkele, the Local Government is further divided into ten (10) political wards, five villages was randomly selected within the local government area. Cassava processors was purposefully identified and selected from the villages.

Table 1: Sampling procedure and sample size of respondents

WARDS	ESTIMATED NOS OF RESPONDENT
Maikunkele Ward	40
Maitumbi Ward	30
Chanchaga Ward	30
Beji Ward	30
Kampala Ward	30
Total	**160**

3.4 Method of Data Collection

Primary data were used for this study. Information was collected from the farmers (processors) which were based on questionnaire and interview.

Two (2) scales were used to determine the training needs of farmers. Scale was allocated as follows: if YES =1 and NO = 0

Income generated: average income/month

3.6 Analytical tools

Data were analyzed using descriptive statistic (such as frequency distributions, percentage, means and table's inferential statistics were used to analyze the hypotheses.

Hypothesis 1 there is no significant relationship between incomes generated from cassava processing and training needs of cassava processors

Hypothesis 2 there is no significant relationship between the demographic (Age and Educational level) characteristics and the number of training needs of cassava processors

CHAPTER FOUR

4.0 Results and Discussion

This chapter is concerned with the presentation of analysis and the interpretation of the data collection

4.1.0 Demographic Characteristics of respondents

These include age, marital status, level of education, years of working experience, number of children, religion and the type of occupation

4.1.1 Age of the respondents

Age is the number of years that a person has lived or a thing has exited. (Oxford dictionary). It is also the length of past experience of a person. It is generally known that the commonest system of Agriculture in Nigeria is the subsistence farming and the use of manual labour is prevalent. The quality of this labour is dependent of age.

Table 3: Age of the respondents

Age (yrs)	Frequency	Percentage (%)
21-30	27	16.9
31-40	51	31.9
41-50	70	43.8
51-60	10	6.3
60 and above	12	1.3
Total	**160**	**100**

Source: Field survey 2014

This research work shows that majority of cassava processor in Bosso LGA were between the productive age group of between 21 – 50 years 92.6%. This implies that they were young and within the productive age which could increase cassava product output.

4.1.2 Distribution of respondents based on household size

In any subsistence agriculture, the number of children is a very important factor that determined the size of labour force and also reduces the cost of hiring labour for processing of cassava.

Table 4: Family size of the respondents

Size	Frequency	Percentage (%)
1-2	25	15.6
3-5	86	53.8
6-8	34	21.3
8 and above	15	9.4
Total	160	100

Source: Field Survey, 2014

Table 4 shows that 53.8% of the respondents had a household size of 3-5 persons and lowest 9.4%. this finding agreed with Syndes (1990), who stated that as the consumption and structure of rural household changes, greater responsibility of household food security and children welfare changes.

4.1.3 Marital distribution of the respondents

Marital status of farmer plays a significant role in agricultural production especially where farm labour is required.

Total 5: Marital status of the respondents

Status	Frequency	Percentage (%)
Single	2	1.3
Married	108	67.5
Divorced	13	8.1
Widowed	37	23.1
Total	**160**	**100**

Source: field survey, 2014

Table 5 shows that greater proportion of the cassava processor 67.5% were married as against 32.5% who were not married. It shows that married women were more involved in cassava processing in the study area. Women are more active in cassava processing and marketing than men folk who dominate the production of cassava roots.

(Adegeye et al, 1999).

4.1.4 Level of education of the respondents

The education background of the farmers affects there capacity and productivity in the long term. The level of education determines the quality of skills, knowledge, understanding and attitude towards new innovation and technology.

Table 6: Educational level of the respondents

Educational Level	Frequency	Percentage (%)
No-formal education	6	3.8
Primary Education	38	23.8
Secondary Education	59	36.9
Post – secondary education	12	7.5
None	45	28.1
Total	**160**	**100**

Source: field survey, 2014

Table 6 shows that cassava processor 68.2% had formal education while 31.9% of the respondents had never been to school.

4.1.5 Working experience of the respondents

This is period one is engage in an active work in a specific field. It is the time spent doing a particular job in an ordinary work environment in order to have the experience of employments.

Table 7: Years of working experience

Years	Frequency	Percentage (%)
1-5	10	6.3
6-10	31	19.4
11-15	55	34.4
16-20	46	28.8
20 and above	18	11.3
Total	**160**	**100**

Source: field survey, 2014

Table 7 revealed that cassava processors in the study area 63.2% had between 11-20 years working experience while 6.3% of the respondents had the lowest. Adimorah (1993) reported that experience rather than education helps cassava processors in their managerial ability

4.1.6 Occupation distribution of the respondents.

The occupation of the farmer determines to a large extends the level of commitment of farmer towards their production and other source of income and consequently the rate of farming.

Table 8: Occupation of the respondents

Occupation	Frequency	Percentage (%)
Farming alone	35	21.9
Farming and Trading	59	36.9
Farming and others	66	41.3
Total	160	100

Source: field survey, 2014

Table 8 shows that 21.9% of cassava processors were into farming alone while 78.2% of the respondents were into farming and other business. This finding agreed with Akor (1990) that also made similar observation that 92% of the survey in the northern rural women takes farming as their secondary occupation.

4.2.1 Identification of training needs

Training needs is the difference between what is and what ought to be (Leagan, 1971). It implies that the gap between the two conditions i.e what the famer knows and what the farmer is expected to know.

The finding shows that none of the cassava processors in the study area had undergoes any training in cassava processing from any organization, hence they understudied themselves.

Table 9: Training needs of respondents

Training	Yes	No
Improved Peeling Method	-	160(100%)
Improved Slicing Method	-	160 (100%)
Improved Boiling Method	-	160(100%)
Improved Steaming Method	5(3.1%)	155(96.9%)
Improved Soaking Method	18(11.3%)	142(88.8%)
Improved Grating Method	78(48.8%)	82(51.3%)
Improved Pounding Method	83(51.9%)	77(48.1%)
Improved Pressing Method	91(56.9%)	69(43.1%)
Improved Roasting Method	98(61.3%)	62(38.8%)
Improved Frying Method	97(60.6%)	63(39.4%)
Improved Drying Method	59(36.9%)	101(63.1%)
Improved Fermentation Method	89(55.6%)	71(44.4%)
Total	**160**	**100**

Source: field survey, 2014

Table 9 shows that 51.9% of the cassava processors required training in improved pounding method also 56.9% and 60.6% of the respondents required training in improved pressing and frying methods respectively. Hence majority of the cassava processors in the study area needs training in different methods of processing cassava.

4.2.2 Reason for training

Training is the process of learning the skills that you need to do a job (Oxford Dictionary). Training is therefore a learning experience that seeks

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a relatively permanent change in an individual that will improve his/her ability to perform a job. Training helps to increase production, improve the quality of product and for maximization of profit.

Table 10: Reason for training of the respondents

Reasons	Yes	No
Improve product quality	106(66.3%)	54(33.8%)
To increase production	47(29.4%)	113(70.6%)
To reduce drudgery	146(91.3%)	14(8.8%)

Source: Field survey 2011

Table 10 shows that 66.3% of the respondents indicated improved quality product as reason for training, also 91.3% indicated the reason for training is to reduce drudgery while 29.4% of the respondents indicated the reason why they needed training is to increase their production.

4.2.3 Frequency of training of respondents

The table below show how often does cassava processors in the study area required training in different method of cassava processing.

Table 11: Frequency of training required

Period	Frequency	Percentage (%)
Regularly	36	22.5
Monthly	64	40.0
Quarterly	46	28.8
Yearly	14	8.8

Source: Field survey 2014

Table 11 shows that 91.3% of the cassava processors in the study area would like to acquire training within three month (Quarterly), while 8.8% would like it yearly. This implies the respondents would like to have the training frequently.

4.2.4 The number of training needs of the respondents

The table below shows number of training needed by cassava processors in bosso local government area of Niger State required.

Table 12: Training needs scores of the respondents

No of training needed	Frequency	Percentage
1	41	25.6
2	14	8.8
3	7	4.4
4	24	15.0
5	30	18.8
6	29	18.1
7	12	7.5
8	3	1.9
Total	160	100

Source: field survey, 2014

Table 12 revealed that 72.6% of the respondents scored less than 6 number of training needs while 1.9% of the respondents scored 8 number of training needs. This implies that cassava processors in the study area really need more training in order to increase their production.

4.3 Income realized per month

Income is the amount realized at the sales of a particular harvest. Table 12 below shows the income generated/month and quantities (kg) produced/month by cassava processors in the study area.

Table 13: Income realized per month

Products	No of respondent	Total		Average	
		Qty (kg)	Income (N)	Qty (kg	Income (N)
Gari	128	· 36,130	6,324,150	282.26	49,407.42k
Fufu	69	14,550	2,718,210	210.86	39,394,34k
Fermented cassava flour	9	180	24,510	20	2,723.00k
African salad	2	180	16,000	90	8,000.00k
Starch	10	710	165,400	71	16,540.00k
Total		51,750	9,457,370	674.12	116,064.76k

Source: field survey, 2014

Table 13 shows the total income generated by cassava processors in Bosso LGA was N9, 457,370 and average income was ₦116, 064.76K per month. It also shows that most of the income realized by respondents comes from Gari₦6, 324,150 and fufu₦2,718,210 while the lowest income comes from African salad ₦16,000

4.4 Constraints of cassava processors

Constraints are the problems faced by the cassava processors. It enables one to know which of the problems the respondents encounter in the study area. These problems discourage them from producing more of their products which in turn have an effect on the income realize.

Table 14: Constructions of the respondents

Constraints	Major		Minor	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Capital	134	83.8	26	16.3
Weather condition	88	55.0	72	45.0
Labour	25	15.6	135	84.4
Equipment	82	51.3	78	48.4
Storage facilities	126	78.8	34	21.3
Water	68	42.5	92	57.5
Firewood	11	6.9	149	93.1
Purchase of cassava	48	30.0	112	70.0
Marketing of product	26	16.3	134	83.3
Stress	158	98.8	2	1.3
Spacing	72	45.0	88	55.0

Source: field survey 2014

Table 14 shows that 83.8% and 98.8% of the respondents had capital and stress respectively as their major constraints while 84.4 and 93.1% of the respondents had labour and firewood respectively as their minor

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constraints, it also shows that water firewood were not problems of cassava processors in the study area.

4.5.0 Testing of the hypothesis

4.5.1 Hypothesis I

There is no significant relationship between income generated from cassava processing and the training needs of cassava processors.

Table 15: Analysis of variance result for incoming generated and training needs.

Variance		Sum of Square	df	Mean Square	F-value	P-value	Decision
Income generate/month	Between Group	5.32E+10	7	7604714678	11.466	$P<0.05$	Significant
	Within group	1.01E+11	152				
	Total	1.54E+11	159	663236462.0			

Source: field survey 2014

Analysis of variance (ANOVA) result indicated a significant difference between the income realized and the training needs of cassava processors($F=11.466$, $P<0.05$). this implies that more training acquired by the cassava processor will lead to increase in income generated.

4.5.2 Hypothesis II

There is no significant relationship between demographic (Age and educational level) characteristic and the number of training needs of cassava processors.

Table 16: Relationship between the number of training need and Age and Educational level

Variable	Chi-Square Value (X^2)	Degree of freedom	Decision
Number of training Need Vs Age	19.813^a	.071	Significant
Number of training Need Vs Education Level	14.997^a	.242	Not Significant

Significant at 5%

Table 16 shows that there was significant relationship between the number of training needs and Age ($X^2=19.813^a$, $P<0.5$) while there was no significant relationship between the number of training and the Education level ($X^2=14.997^a$, $P<0.05$).

This implies that any change in Age will lead to change in the number of training needs of cassava processors.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of the Major Finding

The study was carried out to analyze the training needs of cassava processor in bosso local government area of Niger state.

The specific objective of the study is to assess the socio-economic characteristics of cassava processors, to identify the training undergone so far in processing cassava, to identify the training needs in processing cassava, to ascertain the cassava processors in the study area. The study has two stated hypotheses; the first hypotheses, there is no significant relationship between income generated from cassava processing and training need of cassava processors. The second hypotheses: there was no significant relationship between the demographic (age and educational level) characteristics and the number of training needs of the cassava processors.

A random sample of the one hundred and sixty (160) respondents was chosen. A questionnaire was used for data collection; data were analyzed using frequency distribution, percentage, table, Chi-Square and analysis of variance of variance (ANOVA).

The result of the study indicated that cassava processors in the study area were married women with about 67.5%. A sample of 92.6% of the respondents was within the productive age limit, ranging between 21-50years. This might account for an increase rate of woman activities

required in cassava processing resulting to higher output and poverty reduction. It also revealed that about 68.2% of the respondents had formal education. About 69.4% of the respondents had household size of 1-5 people, the availability of additional family labour will reduce to cost of hiring labour for processing of cassava.

Furthermore, all cassava processors in the study area have not undergone any training on cassava processing from any organization, hence they understudied themselves. About 51.9% and 60.6% of the respondents required training on improved method of pounding and frying respectively. The average income realized/month was ₦116,064.76k,while product/month was 674kg. The problems militating against cassava processing were capital (83.8%), stress (98.8%) and storage facilities (78.8%).

ANOVA shows significant relationship between the income generated and the training needs of cassava processors, moreover Chi-Square test revealed that there was significant relationship between age and the number training need while there was no significant relationship between education level and the number of training needs of cassava processing.

5.2 Conclusion

1. Based on the findings of this research work, cassava processors in Bosso local government have not undergone any training.
2. Also most of the cassava processors were within the productive age 21-50 years.

3. Married women were more involved in cassava processing in the study area

4. Cassava processing is a secondary occupation in bosso local government area.

5. Cassava processors in the study area were faced with problems of storage facilities, capital and stress.

6. Gari and fufu has the highest percentage of the income generated by the processors.

7. Cassava processors in the study area require training in different methods of processing cassava .

5.3 RECOMMENDATIONS

1. Cassava processors should show the zeal to learn and also welcome extension agents.

2. Effective training should be given to processors on how to operate and maintain their machineries

3. If effective training is given, it would improve the quality of the products, increase production and majority reduces drudgery.

4. Processors should produce the quantity they can market and storewithin a short period of time since storage is one of their major constraints.

5. Training should be organized for cassava processors on improved methods of processing cassava.

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