EMPOWERMENT OF RURAL WOMEN FARMERS AND FOOD PRODUCTION IN ESAN WEST LOCAL GOVERNMENT AREA OF EDO STATE, NIGERIA

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Agriculture, when properly harnessed, can generate food security. The avenue through which the potentials of agriculture are unleashed to become beneficial to the wellbeing of the people is through food production (Bhargava, 2008; Ojo & Adebayo, 2012). Food production involves the entire circle of agriculture from land preparation, planting and weeding to processing, and serving of food. It is a task that culminates in food security for a nation. Food security refers to a condition where all people have physical and economic access to sufficient, nutritious and safe food for a healthy and active life (Food and Agricultural Organization, 2012b). Achieving this goal involves a broad range of issues: consumption patterns, control and mobility, land ownership, population growth, distribution of resources, development, trade relations, agricultural production, degradation of the environment, change in climate, economic status, access to credit facilities, and, access to healthcare services. These issues are central to women, yet women's role in food security has been relegated to the background in many contexts, hence the imperative to continue to call attention to women's concerns (Boserup, 1970; Baklit, 1997; IFPRI, 2005a&b; IFAD, 2007; Iruonagbe, 2011; Nchuchuwe & Adejuwon, 2012; Moyo, Jha, & Yeros, 2013).

Even though the contributions of women to social development have remained invisible in many countries of the world, it has been established that women contribute immensely to development through their productive activities (UN, 2010). As it relates to agriculture, more than half of the world's women are involved in food production. Consequently, it has been generally accepted that global food security is dependent on the work of rural women, as they are the major producers of food crops across the globe (IFAD, 2007). Studies have shown that women produce over 50 per cent of all food grown worldwide (FAO, 2012a). The case of sub-Saharan Africa underscores this claim as women grow 80-90 per cent of the continent's food (UNDP 2013). In sub-Saharan Africa, the concern over food crisis has attracted attention to the recognition that human resources relating to

the issue of gender generally reflect an under-resourced subsistence sector that is female dominated (Whitehead, 1990).

Boserup (1970) had lamented this abnormal situation by stating that 76 per cent of active African rural farmers are women who produce 70 per cent of the continent's food. Hence, the region has been identified as one with "female farmers per excellence". According to Ellis, Manuel, & Blackden (2006), Uganda's agricultural labour force consists of over 80 per cent of women, who allocate most of their time to food production and processing. In the Nigerian context, women produce over 80 per cent of her food products (Iruonagbe, 2009b; Sahel, 2014). The performance of the traditional roles of planting, weeding, harvesting and processing by women has increased to include the traditional activities of men, due to the retreat of men's labour from agriculture to the wage sector (Aina, 2012). These women are known to carry out their farm work with simple tools and little external assistance (FAO, 2012a). The situation is even more pitiable as subsistence agriculture is what still dominates among the working lives of these women. This is not the same in the developed world such as Europe and the United States of America, where much of the farm work is mechanized and women's involvement is on the decrease accordingly (EUAE Briefs, 2012). The Brief reported that female employment in agriculture has decreased more rapidly (-2.1%) more than total agricultural employment (-1.3%) from 2010 to 2011 in Europe, even though the total female employment has slightly increased (0.5%).

There have been several campaigns to improve on this practice, but little seems to have been done, as there is still a high global concern for increased food security strategies. Of the Seventy-five per cent of the poor in developing countries who live in rural areas, the proportion of women is very significant (Ravallion, Chen, & Sangraula, 2007, World Bank, 2014a & b). According to Chiebowska (1990), women living in rural areas account for 60 per cent of the world's female population with as much as 70 per cent of them found in less developed countries. Women in large proportion have lived continually in geographically adverse or remote areas and have engaged in unsophisticated agriculture. More specifically, they still remain food in-secure farmers (von Braun, 2005). Some scholars, like Momsen (2004) and Whitehead (1985), posit that the reason for this emanate from inadequate knowledge about the regional differences of these women

amidst climate change, soil fertility, accessibility of credit facilities, family structure, farming systems, among others (Momsen, 2004).

In Nigeria, gender roles in agriculture have undergone several transitions overtime (Edewor, 2002). Modernization of agriculture has come to favour the male counterpart. Men were privileged to be educated, had access to technical assistance, and have benefited from laws that granted them access to resources, especially land. Women, on the other hand, have been further entrenched into the mainstream of agriculture with crude methods of cultivation, harvesting and production (Baklit, 1997; FAO, 2003). They have been excluded from agrarian reforms training programmes deriving from the erroneous perspective of the western experts that men are the main agricultural decision-makers, as it is practiced in the west (Iruonagbe, 2011; Aina, 2012). The task of household food production - the basic right of household members to the food they need - is thus enormous on women, especially for those in the rural settlements (UNDP Africa, 2013).

In the past, women were merely referred to as 'farmer's wives' engendered by the structure of farming instituted by the British during their colonial rule in Nigeria (FAO, 2003). The British promoted the cultivation of cash crops such as rubber, cocoa, cotton and timber at the expense of food crops which became neglected in the hands of the 'farmer's wives'. All efforts towards boosting agriculture were targeted at cash crop production, which was cultivated by men only. Put in another way, men were those assisted to boost their cash crop agricultural production; not women. This is evident in agricultural policy promulgated by the British which was anchored on the production and export of agricultural crops (Akanni, Akinleye, & Oyebanjo, 2009).

Over the years, the Nigerian Agricultural Policy has emphasized self-sufficiency with strategies such as articulation and implementation of integrated rural development programmes in boosting the quality of lives of rural people, increment of the budgetary allocation and other fiscal incentives to agriculture and promotion of essential developmental, supportive and service-centered activities in improving agricultural productivity without a woman's perspective (Oluwasola, 1998). Furthermore, aspects of the National Development Plan relating to agriculture have frequently highlighted great goals such as the introduction of advanced farming techniques through the establishment

of co-operative plantations, farm settlements, supply of improved farm implements, and agricultural extension service. However, women are neglected in the implementation of these goals (Aina, 2012).

The history of women empowerment in Nigeria can be traced to the emergence of poverty alleviations programmes in the country as a strategy by the Nigerian Government to boost the economy (Aibiyi & Dirisu, 2010). Poverty reduction strategies became imperative in Nigeria consequent upon the increasing rate of poverty among the population after the Nigerian independence of 1960. Report showed that incidence of poverty in Nigeria in 1960 was about 15 per cent but in 1980 it had grown to 28 per cent and by 1985 the extent of poverty was about 46 per cent. In 1996, poverty incidence in the country was 66 per cent or 76.6 million Nigerians from the Nigerian population of 110 million (Forae, 2011; Yakubu & Abbass, 2012).

The drive to alleviate poverty constituted the focus of the four development plans in the country from 1962 to 1985 with the general goal of achieving and maintaining the highest possible rate of increase in the standard of living and the creation of necessary conditions (Ayo, 1998; Ukah, 2007). The history of development plans in Nigeria is, however, traceable to the 1940s when the British Colonial Office directed the colonies to a prepare development plan for the disbursement of the Colonial Development and Welfare Funds. This was followed by the establishment of the National Economic Council in 1955 with the mandate to mobilize the nation's growth in accordance with the recommendation of the World Bank Mission to Nigeria. Subsequently, the Nigerian pre-independence development plan was launched in 1959 (Ayinla, 1998; Darma &Tijani, 2014).

The first post-colonial development plan lasted from 1962 to 1968. The focus of the plan was to advance opportunities in health, education, and employment. The second plan existed from 1970 to 1974 with priorities in agriculture, transport, industry, manpower, electricity, communication defence, and water supply and provision of social services. The third development plan, which was rated to be more assertive than the second plan, was from the period of 1975 to 1980, with enormous focus on rural and agricultural development. The fourth plan covered the period of 1981 to 1985 and gave attention to the role of social services, health services, among others. (Ogwumike, 1995; Ayo, 1998;

Lawal & Oluwatoyin, 2011). According to Obadan (2002), there were four poverty-related objectives articulated in these developments from 1962 to 1985:

(a) increase in per capita income;

(b) more even distribution of income;

(c) reduction in the level of unemployment; and

(d) increase in the supply of high level manpower.

Many of the poverty alleviation strategies were connected with rural and agricultural development. However, some, such as the National Directorate of Employment (NDE, 1986), National Poverty Alleviation Programme (NAPEP, 2001) and Poverty Alleviation Programme (PAP, 2002) were to directly address poverty. The National Directorate of Employment consists of four main programmes: the Special Public Works Programme, the Vocational Skills Development Programme, the Agriculture Employment Programme and the Small Scale Enterprises Programme. PAP was an ad-hoc measure initiated in 2000 to address the problems of crime wave and rising unemployment, particularly among youths with the ultimate aim of increasing the welfare of Nigerians. The primary objectives of PAP were three-fold: increase the productiveness of the economy; drastically reduce the embarrassing crime wave in the society and reduce the problem of unemployment and hence raise effective demand in the economy.

The following year, precisely 2001, witnessed the introduction of NAPEP, which was focused on the provision of "strategies for the eradication of absolute poverty in Nigeria" (Alese, 2013). The objectives of NAPEP were, among others, to provide a model which lays emphasis on appropriate and sustainable institutional arrangement; inter-ministerial and inter-agency cooperation; pro-active and affirmative action purposefully targeted at women, youths, farmers and the disabled; the participation of traditional rulers, the communities and every registered political parties; capacity building for existing skills acquisition and training centres; technology acquisition and development especially for agriculture and industry; the provision of agricultural and industrial extension services to rural areas; expanded structures for youth empowerment, provision of social welfare services and exploitation of natural resources development of infrastructure and institutional development for marketing of agricultural and industrial products (Aliu, 2001).

The most comprehensive strategy was evolved in 2004 with the nomenclature 'National Economic Empowerment Development Strategy'. It focused on four key strategies: creating wealth, reorienting values, generating employment and reducing poverty (FRN, 2001; Obadan, 2002; NPC, 2004). The document specified that it is an indigenous strategy established to build on existing poverty alleviation programmes in conjunction with the State Economic Empowerment Development Strategy (SEEDS)…

> *As Nigeria's Poverty Reduction Strategy, NEEDS builds on the earlier effort to produce the Interim Poverty Reduction Strategy and the wide consultative processes associated with it. NEEDS recognizes that the fundamental challenge at this stage of Nigeria's development is to meet the basic needs of its people and reduce poverty on a sustained basis. NEEDS is about the Nigerian people. Their welfare, health, employment, education, political power, physical security, and empowerment are of paramount importance in realizing this vision of the future. Together with the state economic empowerment and development strategies (SEEDS), NEEDS seeks to implement an integrated rural development programme to stem the flow of migration from rural to urban areas (NPC, 2004: vi & ix).*

1.1.1. Agricultural policies and programmes in Nigeria

Programmes for poverty alleviation have been focused on agricultural development as all the plans accorded the agricultural sector the highest priority (Obadan, 2002). It is expedient at this point to make some clarifications on the concept of plan, programmes and policies. Plans represent a blueprint of what is intended to be achieved. Programmes are plans that have been expanded to include objectives to be achieved, specifications of resources required and phases of work to be executed. The concept of programme connotes the existence of a goal in focus. This requires several activities that should be co-ordinated to achieve the set goal. Policies provide the guidelines on the actualization of programmes (Olatunji, 2005).

An agricultural policy is a declaration of intended action by the government, which is a vital instrument designed to attain agricultural advancement (Iwachukwu & Igbokwe, 2012). Agricultural policies and programmes in Nigeria have gone through several changes since independence in 1960. Amalu (1998) opines that these changes have been a mere reflection of alterations in government or administration rather than a national commitment to agricultural growth, as these programmes and policies differ only in organizational network and nomenclature. The objectives, which include to provide food

for the people of the country and export excess to other countries, agricultural support and rural development services and to provide rural dwellers and farmers with extension services, have remained unchanged. For clarity, the policies and programmes shall be explained under colonial and post-colonial periods.

1.1.1a The colonial era

According to Aigbokhan (2001), the potential of agriculture to propel Nigeria's economic development was identified by the colonial government deriving from the policies designed to encourage output growth and to extract the surpluses from Nigeria to Europe. Ayoola (2001) adds that the predominant theme of development during the colonial period was the surplus extraction philosophy or policy where immense products were generated from the rural areas to meet the quest for raw materials in metropolitan Britain. The focus of the extraction policy was on forest resources and agricultural exports like timber, cocoa, coffee, cotton, rubber, groundnut, and oil palm. These policies are Forest Policy (1937), Forest Policy (1945), Agricultural Policy (1946), Policy for the Marketing of Oils, Oil Seeds and Cotton (1948), Forest Policy for Western Region (1952), Agricultural Policy (1952), Policy for Natural Resources (undated) and Western Nigeria Policy of Agricultural and Natural Resources (1959). There was no effort to establish industries in Nigeria by the colonialists, as the manufacturing of goods was encouraged only to the extent that it enhances easy export of raw materials (Osagie & Otoide, 2015). The expression of Lugard (1965) in his book *The dual mandate in British tropical Africa* confirms this position…

> *our task is clear, it is to promote the commercial and industrial progress of Africa, with too careful scrutiny of the material gains to ourselves.... It has ...been our policy to encourage the export of raw materials, and to improve their quality, to promote trade and commerce, but not manufacture and industry (p.510).*

Iwachukwu & Igbokwe (2012) further observe that the colonial agricultural policies were formulated without adequate institutional arrangement, programmes, strategies, specific projects and targets designed for the realization of the themes of the policies. This was found to emanate from the fact that there was only one written agricultural arrangement that was developed towards the end of the era (early 1960s) with the nomenclature *Farm Settlement Scheme.*

The Western Nigerian government policy gave rise to the Farm Settlement Scheme (FSS) in 1959 as a laudable approach that was capable of increasing agricultural production in the region. The scheme was patterned after the Isreali Moshav model deriving from the recommendation of Chief Akin Deko, then minister of agriculture in Western Nigeria, after his return from Israel. The settlers were to come from an area within 30 miles of the settlement and were to be at least primary-six certificate holders. They were to undergo trainings at farm institutes where they would learn all they needed to be competent farmers for two years. After completing their training they were to be sent to the farm settlement of their home area. The cost per settler was estimated at £3,600 or $10,000 (Wells, 1966; Olatunbosun, 1971).

According to Olatunbosun (1971: 419), the farm settlement scheme had the following objectives:

1. To bring about rural progress.
2. To make farming efficient, lucrative, and attractive to the hundreds of thousands of primary-six school leavers who shun the type of village life they know and drift to the cities in search of amusements and white-collar jobs.
3. To demonstrate that by careful planning, farms can be established and operated by young, educated farmers (with reasonable assistance in the form of advice and loans from the government or other sources) which will provide a comfortable standard of living for the owners comparable to or higher than that gained by persons of their own status in other forms of employment.
4. To mitigate against an unfavourable land tenure system that contains no legal boundaries and in which the lack of security of tenure deprives the farmers of an asset against which to raise loans and of an incentive to invest in long-tern improvements.
5. To solve partially the unemployment of the school leavers who cannot all be absorbed by higher educational institutions or by industries. By 1967, it was estimated that there were as many as 700,000 unemployed school leavers in Western Nigeria.
6. To act "as models for others to copy" and serve as "another extension method with a view to accelerating agricultural development in Western Nigeria."

1.1.1b Post-colonial era

Deriving from the fact that Nigerian civil rule was truncated by the military interruptions beginning with that of 15th January 1966, and subsequent ones until the return of democracy on 29th May 1999, the process of post-colonial agricultural policies and programmes in Nigeria has been a disjointed one (Akinola, 1998; Amalu, 1998). The agricultural policies that were formulated during this period included: the Agricultural Policy for Nigeria 1988 and Agricultural (Control of Importation 1990). Others include the River Basin Development Decree (Decree 25 of 1976) and Land Use Decree promulgated under the military regime of General Olusegun Obasanjo in 1978, which was later changed to Land Use Act (Iwachukwu & Igbokwe, 2012). The current National agricultural programmes are those policies that were initiated and implemented by the Federal Government of Nigeria (FGN) alone or in conjunction with the World Bank, multilateral agencies, state or local governments, and other Non-Governmental Organizations (NGOs). Evidence shows that some of these programmes usually started as pilot projects and then were expanded to cover all or most states and or local governments in the country to make them 'national' in outlook (Agber, Iortima & Imbur, 2013).

These post-independence programmes can be categorized into pre and post 1980 (Agber *et al*., 2013). Programmes established between the end of the Nigerian civil war and the year 1980 are: the International Institute of Tropical Agriculture (IITA, 1967), National Accelerated Food Production Project (NAFPP, 1972), River Basin Development Authority (RBDA, 1973), Agricultural Development Project (ADP, 1975), International Food Policy Research Institute (IFPRI, 1975), Operation Feed the Nation (OFN, 1976), International Fund for Agricultural Development (IFAD, 1977) and the Green Revolution Programme (1980). The programmes that fall under the post 1980 category are: Accelerated Development Area Project (ADAP, 1982), Multi-state Agricultural Development Project (MSAP, 1986), Nigerian Agricultural Insurance Scheme (NAIS, 1987), National Fadama Development Project (NFDP, 1992), the National Special Programme for Food Security (NSPFS, 2003), the Comprehensive Africa Agriculture Development Programme (CAADP, 2003), and the Agricultural Transformation Agenda (ATA, 2011).

At the state level, as documented in Edo State SEEDS (2005), the State is committed to agriculture and rural development. The State, which as created in 1991 out of the defunct

Bendel State formed in 1963 achieves this goal in many ways. These include the enhancement of productivity of peasant farmers by the supply of improved seeds/seedlings, and other farm inputs and improved rural infrastructure - electricity, portable water, schools, roads, health facilities and so on. The State aimed to improve access to rural electricity by 30% in 2007 and 80% by 2015 and increase access to rural communities by 35% by 2007 and 90 % by 2015. The agricultural policy thrust of the State is anchored on:

> *the vision to bring about the transformation of agriculture to ensure greater productivity which would ensure adequate food supply, high farmer income, provide raw materials for agro-based industrialization and contribute significantly to poverty alleviation in the State* (ESEEDS, 2005).

The policy targets were:

1) To increase tonnage of agricultural staples by 45% by 2007;
2) To stabilise prices of agricultural prices; and
3) Increase access to agricultural inputs by 50% by 2007.

The strategies were:

1) Provision of pineapple juice processing plant at Eghor before the end of year 2006.
2) Fertilizer Blending Plant at Auchi; and Cassava Processing Plant at Uromi before the end of year 2006.
3) Procurement of more tractors including single-axle type.
4) Six more State Model Farm Settlements at least 2 in each of the senatorial districts before the end of year 2006.
5) Attract private sector participation to the state to invest in agricultural production.
6) To provide more agricultural inputs such as tractors at least 1 in each of the Local Government Areas of the state to complement the existing ones before the end of year 2006.
7) Increase the production of raw materials to meet the growing needs of an expanding Agro-allied industrial sector.

8) Promote locally adapted technology for developing storage facilities in the State.

9) Production and processing agricultural commodities for export using improved techniques.

10) Appropriate pricing and quality guideline for agricultural produce.

1l) Increase the number and quality of agricultural extension service staff to facilitate information and research dissemination to farmers to enhance technology adaptation.

The agricultural policy of the current administration of Edo State is hinged on private initiatives by the withdrawal of the State from direct farming to encouraging small farm holders through the provision of land, construction of farm roads and organization of farmers' co-operatives. The policy is hinged on developing agriculture through a private-public partnership arrangement. This is to involve constructing access road to the farms, giving of Certificate of Ownership (C of O) for free to private practitioners and assisting them with agricultural inputs directly or indirectly from genuine agro-based dealers so that an effective value chain can be established. So far 32,000 farmers have been registered with the aim of reaching more than 100,000 registered farmers in a few months from now (Babatunde, 2012).

The benefits derivable from these programmes by those to whom they are targeted are determined by various factors including gender – male or female; age – young or old; location – urban or rural; level of education – high or low; among others. Villarreal (2000) noted that access to productive resources such as land, credit, technical know-how, knowledge, technology transfer is strongly determined along gender lines, with men frequently having more access to all these than women (Olokoyo, George, Efobi, & Beecroft, 2015; Zunguze, 2007).

1.2. Statement of the research problem

Efforts at empowering women have encountered setbacks both at theoretical and empirical levels due particularly to the seeming vagueness in the definition and analysis of the word 'empowerment' (Swain & Wallentin, 2008). Many scholars have asserted that because power relations operate at different levels, so does empowerment (Mayoux 2001; Bisnath & Elson 1999). However, there is a divergence on exactly how these levels are

defined. The micro and macro levels are often adopted but less empirical attention is given to aggregations that exist in the middle, particularly at the community level within which institutional and normative structures such as family systems, infrastructure, gender ideologies, customary law, and so on, which often determine the level of women's empowerment. It is often precisely at these intermediary levels that normative changes occur and where policy interventions frequently function (Malhotra, Vanneman, & Kishor, 1995). This has resulted in the problematic associated with determining women's areas of need for intervention. One of such problems is the sparseness of data on women's ownership, control and management of land in Nigeria generally and Edo State in particular. This inhibits the development of policies to tackle the existing and potential inequalities women encounter (PIM, 2014).

Agriculture has proved to be an important engine of growth and poverty reduction in many countries of the world (Ashimolowo & Otufale, 2012; Olokoyo *et al.*, 2015). Women, who operate at the subsistence, small farm holder level, constitute the major food producers in many of these countries. Rural women participation, more than men, take the lead in agricultural activities, consisting of about 60-80 per cent of the labour force (Sahel, 2014). The prevailing gender inequality that dominates in the sector places rural women farmers at a point of disadvantage, which limits their productivity (Ogunlela & Mukhtar, 2009; Acha, 2014). In pursuance of empowering women, policies and programmes have been initiated globally both by multilateral bodies and national agencies over the years, especially in the last three decades. Data on the impact of the Nigerian agricultural policies and programmes on the productivity of rural women farmers is scanty in the literature (PIM, 2014). The paucity of data regarding rural women farmers constitutes a major problem to the empowerment of rural women farmers (Olaleye, Ibrahim, & Ojo, 2009).

With specific reference to Edo State, women are the major producers of food crops in the State. Edo state contributes enormously to the food basket of Nigeria arising from its large expanse of fertile land (Ukpong, 1995). From only 8.62Km^2 of the total 62Km^2 of land used in 1979, which represented less than half of the available land, growth and expansion have increased to 29.28 Km^2 as at 2003 (Aziegbe, 2006). From the world record Nigeria holds as the largest producer of cassava in the international market, Edo State is the largest producer of cassava in the South-South geo-political zone of the nation

and cassava is mainly produced by women (ESEEDS, 2005: 113; Adesina, 2012). Most Edo men are engaged in part time cash crop farming and non-farming full-time occupations such as civil service jobs. Many youths have migrated to urban areas for non-farm job opportunities. Those present in the rural areas consider farming as a herculean task and so are employed in other jobs like craftsmanship, commercial motorcycle riding rather than farming or better still engage in farming on part-time basis (Akpan, 2010). As such, the burden of food production is left in the hands of women. The need to empower them in this regard, therefore, becomes imperative (Iruonagbe, 2010d).

Literature is replete with the fact that closing the gender gap in agriculture would generate significant gains not just in the agricultural sector, but also in the larger society as a whole (Iruonagbe, 2010b; Aina, 2012; Fan, Torero & Headsey, 2013). This buttresses the position of Food and Agricultural Organization of the UN that if women had the same access to productive resources as men, their agricultural yields could be increased by 20–30 per cent. As such, this could enhance the total agricultural yield in developing countries by 2.5–4 per cent, which could in turn decrease the number of hungry people in the world by 12–17 per cent (FAO, 2011). Research has shown in sub-Saharan Africa that when women access similar farm inputs as average male farmers, they are able to grow their production of maize, beans and cowpeas by 22 per cent (Caldes, Coady, & Malucci, 2004). More so, in Kenya, where the level of education women receive is extremely low, a year of primary education provided to all women farmers would boost maize yields by 24 per cent (IFPRI, 2008). There is scarcity of data regarding the impact of empowerment on rural women's farm yield in Nigeria, particularly in Esan.

The comprehensive advocacy for the advancement of women's issues from international and national contexts has achieved some level of success. Consequently, the status of women, no doubt, has witnessed some degree of alterations. However, change has not always been progressive. Information on the influence of alterations by government policies and programmes on the ability of the Nigerian rural women farmers to produce food remains shallow. There are indications from some parts of Nigeria that many programmes have positively affected the well-being of women farmers to produce food. These states include Gombe (Fabiyi, Danladi, Akande, & Mahmood, 2007), Benue (Ekpe, Idiong, & Chinemerem, 2000; Dauda & Ajayi, 2009; Okwu & Umoru, 2009), Oyo (Ayoade, Ogunwale, & Adewale, 2011), Kaduna (Yakubu & Abbass, 2012), Imo

(Odurukwe, Matthews-Njoku, & Ejiogu-Okereke, 2006; Adesope, Nwakwasi, Matthews-Njoku, & Chikaire, 2012), Ebonyi (Umeh, Chukwu, & Oselebe, 2014), and Ondo (Adeleke, 2015). The positive impact of ADP and IFAD in Edo State has been documented (ESEEDS, 2005: 113), but the extent to which Esan rural women farmers have been impacted by these programmes remains shrouded by speculations.

Being cognizant of the various programmes instituted over the years to boost agricultural productivity and rural development in Nigeria as a whole, and Edo State in particular, it becomes expedient to know how these programmes have performed among Esan rural women who are predominantly farmers known for their enormous production of processed cassava called 'Ekpoma *gari*'. It has been noted that data on rural women farmers' ownership and access to productive inputs such as land, modern farm technologies, agricultural extension services and credit is vastly limited in Esan land (IFPRI, 2013). Some past studies conducted in Edo State concerning rural women have not revealed how Esan rural women farmers have benefitted from agricultural policies and programmes in the State (Omorodion, 2007; Ozoya, 2008; Iruonagbe, 2009; Okojie, Monye-Emina, Eghafona, Oseghae, & Ehiakhamen, 2009).

Consequently, no comprehensive study has been conducted to reveal how the various agricultural and rural development efforts have afforded Esan rural women farmers access to agricultural productive inputs for increased food production. No doubt, some level of empowerment should have been experienced by Esan rural women farmers. However, it is expedient to understand the issues surrounding their access to empowerment and food production. These issues include whether or not there is more ownership and access to land, modern farming technologies, agricultural trainings; and micro-credit. It is also imperative to assess the extent to which these have impacted on their food production capacity. Finally, the factors inhibiting their ability for increased food production despite the empowerment programmes need to be identified. Achieving these goals will help to make appropriate recommendations for women empowerment, rural and agricultural development in view of ensuring food security. This is what constitutes the attention of this study.

1.3. Research questions

i. What is the land ownership pattern and how does it affect the type of crops cultivated by rural women farmers in Esan West Local Government Area of Edo State?

ii. Do the women utilize advanced farm techniques? If so, to what extent does the utilization of advanced farming technologies enhance the level of food production among these women in the study area?

iii. What is the impact of agricultural extension services and women farmers' education on the food production capacity of these women in the study area?

iv. To what extent are credit facilities accessible to rural women farmers in the study area and what is the impact of their loan access on food production?

v. What are the factors inhibiting rural women's capacity to increase food production?

1.4. Aim and objectives of the study

The broad aim of this study is to examine the extent to which rural women farmers in Esan West Local Government Area of Edo State are empowered and the effect of the empowerment on food production.

The specific objectives of the study include to:

i. examine the land ownership pattern in Esan West Local Government Area of Edo State and how it affects the type of crops cultivated by rural women farmers in the area;

ii. determine whether rural women farmers in the study area utilize advanced farming technologies and the extent to which the utilization of these technologies enhances the level of food production;

iii. assess the impact of agricultural extension services and women farmers' education on the food production capacity of these women in the study area;

iv. ascertain the extent to which credit facilities are accessible to rural women farmers in the study area and the effect of such credit facilities on food production; and

v. identify the factors inhibiting rural women's capacity to increase food production.

1.5 Scope of the study

The study focus was on women in Esan West Local Government Area of Edo State, Nigeria. This was important because Edo State exists within the agricultural zone of Nigeria having more than 70% of the population of the State involved in agriculture, with women having the greater proportion of the farming population (Babatunde, 2012). Only active rural women farmers were considered. An active rural woman farmer was defined as a female from the age of 20 to 69 years in the study area. This is an adaptation of the definition of an adult woman by the World Health Organization as a female from age 20 to 59 years (WHO, 2013). It became necessary to increase the boundary age for active rural farmers because studies have shown that many women still engage in farming at their older age from 70 years (Hoppe & Korb, 2013; Okwu & Umoru, 2009). On the other hand, 69 years was specified as the maximum age of respondents qualified to be considered in this study because many women who still carry on farm work after 70 years of age do at a very basic level but they are not active farmers and empowerment programmes are not often targeted at them.

1.6 Significance of the study

Availability of food is a central issue, as human life depends on the ability to find enough food to eat (Sen, 1987). The discourse on how to increase rural women's capacity to food production will continue to be a recurring one, as it affects the well-being of the world population. According to FAO (2012c), nearly 870 million people of the 7.1 billion people in the world, or one in eight, have been known to be experiencing protracted undernourishment in 2010-2012. This implies that about a billion people are food

insecure globally. About 85 per cent of these hungry people live in less developed countries, particularly those of Africa. This number represents 15 per cent of the population of developing countries, hence they are grouped as 'the continent of the hungry' (Weis, 2007).

The target set by the Millennium Development Goals (MDGs) was to halve the proportion of hungry people by 2015. Using the new estimates designed to measure world hunger; the number of undernourished people was reported to be 1 billion in 1990-92 and had decreased to 870 million in 2010-12, with the goal of 500 million people. Thus, as at 2013, the world was 234 million people away from reaching this target. The 2014 progress report by the United Nations reveals that poverty is still very high in sub-Saharan Africa (UN, 2014). This clearly shows that the stakeholders, the rural women, who hold the key to eradicating hunger, have been neglected, either through poor funding or lack of access to productive resources (FAO, 2012a).

The disparity between the large number of women involved in farming and increasing food crisis situation in Africa, Nigeria in particular, buttresses the lingering argument that women have been denied sufficient empowerment in their contributions to social development. It would have been expected that increasing number of women involved in agriculture would have a corresponding effect by reducing food crisis. So, women's inability to contribute maximally to food security persists because they are still perceived as just farmer's wives and mothers as in the past (Jiggins, Samata, & Olawoye, 1997). This makes their central role in development to be relegated to the background and still remain food insecure (Boserup, 1970; Whitehead, 1994; Iruonagbe, 2010b). Rural women play a greater role than their urban counterparts in ensuring the capacity of their families to produce adequate supplies of food on a regular basis (Whatmore, 2002). In the past, rural women cultivated the land mainly for subsistence, but recent times have witnessed a change, as there are other demands that need to be attended with cash, and so they now produce for sale, though on a small-scale (Cloke & Park, 1984; IFAD, 1999; Cloke, 2006).

Despite the significant function they perform in food production, women have ownership of only 1 per cent of the land and have difficulty in access and control over land. They also lack access to credit, technical assistance and participation (ILO, 2008, Iruonagbe,

2012d). Only 5 per cent of the resources provided through extension services in Africa are available to women (UN, 2014). Agricultural extension strategies have been conventionally focused on increasing the production of cash crops by providing men with training, information, and access to inputs and services to the detriment of women, who produce food crops. The focus on the need to produce more food for family consumption and for sale to address the food insecurity situation can only be met by empowering the major producers, who are women (FAO, WFP, & IFAD, 2012). However, this empowerment cannot be effective without adequate knowledge about their farming systems, as well as their constraints. Agricultural extension services have been found to boost agricultural production in some parts of the world, such as some Asian countries (IFPRI, 2008). It, therefore, becomes appropriate to investigate this position among women farmers within some farming communities in Nigeria, Edo State in particular. The study area is appropriate judging from the fact that farming constitutes the primary occupation of the women in the community.

The content of this research work is expected to provide some vital information regarding the specific ways rural women in Esan West of Edo State can be empowered to boost their food production thereby enhancing their capacity to contribute to food security in Nigeria and globally. Specially, this study will help to develop appropriate indicators that can be adopted in the measurement of the empowerment of rural women farmers. The government and its agents, Non-Governmental Organizations (NGOs), welfare planners, fellow researchers, and the general public will find this work as an invaluable source of information and reference.

1.7 The research setting

1.7.1 Study area

Esan West Local Government Area is located in the area known as Esanland in Edo State. Edo State lies roughly between longitude 06^{o} 04'E and 06^{o} 43'E and latitude 05^{o}44' N and 07^{o}34' N. It is bounded in the north by Kogi State, in the west by Ondo State, in the east by Kogi and Anambra States and in the south by Delta State. The State occupies a land area of about 17,802 square kilometers. From the 2006 census the state had a population of 3,218,332. Of the total population, 1,640,461 were males, while females were 1,577,871 (NPC, 2006). The state was created in 1991 by the General Ibrahim Badamosi

Babangida regime from the former Bendel State, alongside Delta State. The administrative capital is Benin City, and the State is made up of 18 Local Government Areas. It is reported that the State has about 1,156,916 hectares of arable land area and 584,645 cultivable portion of land for tree crops plus arable cultivation of 182,170 hectares and flood plains that stretches to about 73,000 hectares for food production. The weather in the state is favourable, as the raining season has been very consistent without any record of drought over the years (Aziegbe, 2006).

The area called 'Esan' consists of five Local Government Areas namely Esan West, Esan Central, Esan North East, Esan South East and Igueben. Ekpoma is the administrative headquarter of Esan West Local Government Area. Esan land is bordered to the south by Benin City, to the south-east by Agbor, to the north and east by Etsako. From Ewu to Benin City, the State capital is 100 km long. In Central Edo State, South-South Nigeria, the people populate areas such as Irrua, Uromi, Igueben, Ewatto, Ebele, Ubiaja, Ehor, Ewu, Ekpoma and so on. The area has a flat landscape, which is devoid of rocks and mountains, and highly suitable for agricultural purpose (Okoduwa & Odigie, 2008).

Esan West Local Government Area is bordered by five (5) Local Government Areas, Owan East and Etsako West in the north, Esan Central in the east, Uhunmwode in the west and Igueben in the south. Esan West Local Government Area has its headquarters in Ekpoma (see Figure 1.1). Overtime, Esan West Local Government Area has witnessed an upsurge in urbanization and population density since the establishment of the State University in Ekpoma. Consequently, there has been an increase in the level of industrial and agricultural activities in the town (Obasohan, 2008) though much of such industrial increase in agricultural activities has not reflected much in women's food production activities.

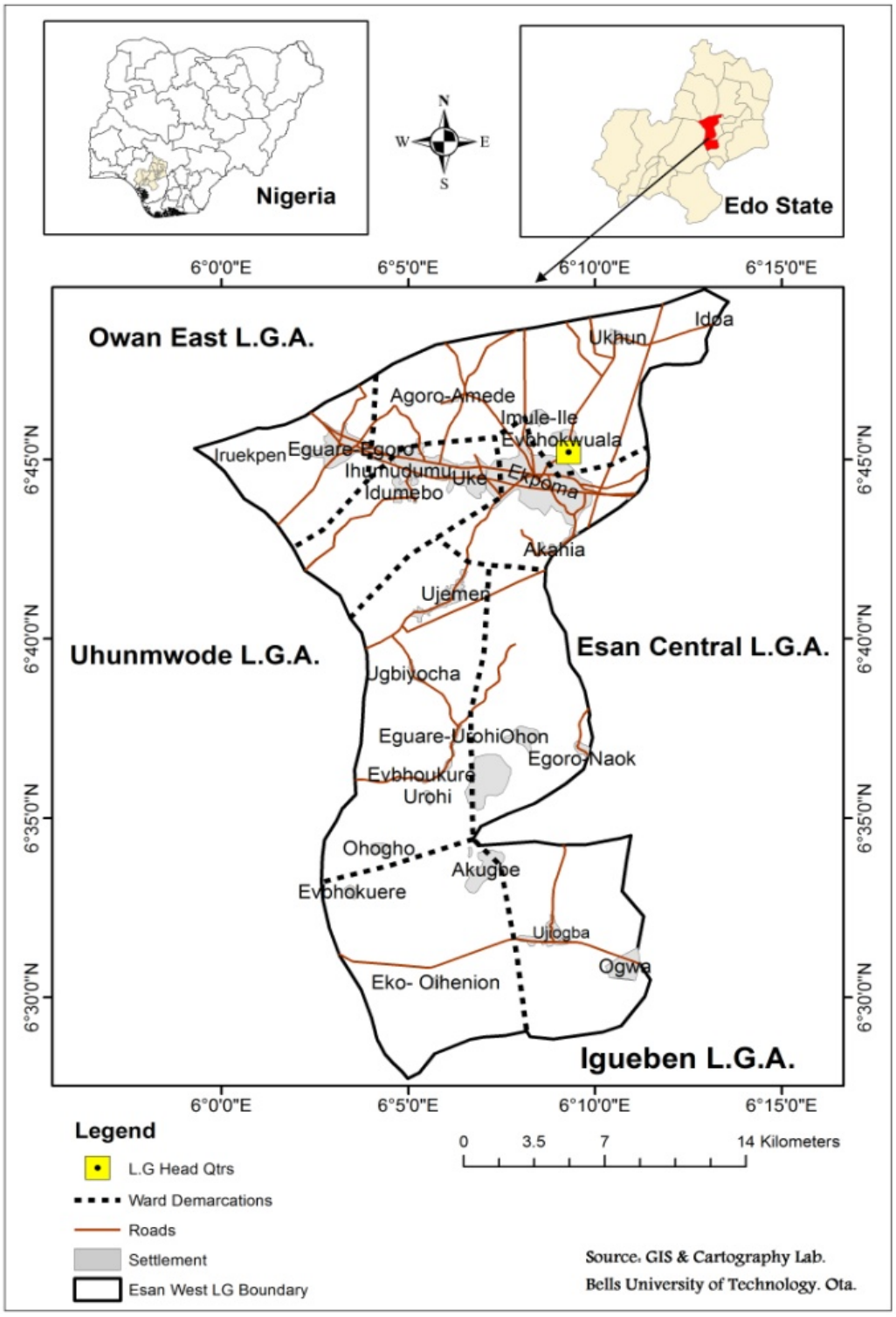


Figure 1.1: Map of Esan West Local Government Area

1.7.2. Historical origin of Esan West Local Government Area

With respect to the historical origin of Esan generally, there exist several versions. The basic short version is that which is taken to be the origin of the Esan. Those who relate this version of the historical origin of Esan contend that the name 'Esan' is an abbreviation of the verb word *'Ele san fia'*, later E-san-fia, until it became a single word Esan (or Ishan, the corrupted version by the colonialists).

Ele san fia means 'they have jumped away'. This word has its origin in the spontaneous exodus of a group of people from the Bini Kingdom as a result of the perceived brutal treatment by the Oba of Benin. The story is told that the monarch of Bini, Oba Ewuare had decreed: "No making of fire to cook; no cleaning of homes; no procreation; no washing of clothes." Perceived as an unbearable decree, many Bini natives fled from the Bini Kingdom to settle somewhere else, a place now known as Esan. When the Oba noticed the absence of some of his subjects, he made enquiries from his chiefs about their where about. It was at that point that the Oba was told "*Ele san fia*" (They have fled).

This version of the origin of Esan traces its origin to the Kingdom of Bini (Okojie, 1960). However, some historical views to the origin of Esan argue that the Esan people have always been where they are presently and that Bini actually migrated from Esan to its present location (Webster & Ogbomo, 1997).

1.7.3. Rulership in Ekpoma clan and title system

Rulership in Ekpoma units is by the system of gerontocracy. This implies that the ruler of each unit is defined by age and must be the oldest person in that area. This has allowed for serenity in the various quarters as every member of the society is aware that such a position is not contestable by anyone. It is an achieved position via the qualification of age.

However, there is a higher order of rulership beyond the unit level. Esan is made up of a total of thirty four kingdoms consisting of large villages/townships ruled traditionally by monarchs. Seven of these Kingdoms make up Esan West Local Government Area. Ekpoma Kingdom is where the Local Government headquarter is located. Esan Kingdoms are ruled by a royal family as dictated by the rule of primogeniture. The king assumes the status by ascription rather than achieved. The 'Crowned Prince', who is usually the first

son of the present king, is crowned king upon the demise of that present king. To ensure the existence of a male child in the royal family to take over from the present king, the king is permitted to marry as many wives as he desires. The name of the king in Esan is called *Onojie* and the area he lives is known as *Eguare*.

1.7.4. Vegetation and physical features

The area that constitutes Esan West Local Government has a tropical climate characterized by two distinct seasons: the wet and dry seasons. The rainy season appears between April and October with a short break in August. The average rainfall in the State ranges from 150 cm (59") in the extreme north of Edo State to 250 cm (98") in the south. The dry season occurs from November to March accompanied with a cold harmattan period between December and January. The average temperature is about 25 °C (77 °F) in the wet season and about 28 °C (82 °F) in the dry season.

1.7.5. Major occupation and economic activities

Esan West is an agricultural community, having most of its women engaged in the occupation of farming. It maintains a patriarchal social structure and subsistence farming is prevalent. The main crops cultivated in Ekpoma are cassava, yam, rice, pineapple and corn. Cassava constitutes the most common crop cultivated among the women for a number of reasons namely; it is easily adaptable to the soil; it is easy to maintain especially with respect to weed control; it can be produced into various forms of food such as *fufu* and *gari*, which are common foods among the Ekpoma people.

Although it has numerous streams, they are too small for the occupation of fishing. Most of the women, besides food crop production, engage in petty trading. These women provide much of the labour force for post-harvest activities and they are often saddled with the responsibility of storage, handling, stocking, processing and marketing. Most men in Ekpoma engage in cash crop production and own economic trees such as kola nut, orange, rubber and cocoa. The young men are highly involved in Okada (motor cycle) riding, which they find profitable because of the large number of students of the State University in the area who mostly depend on that means of transportation for mobility. Many Ekpoma people are also artisans such as mechanics, hairdressers, tailors, plumbers and taxi drivers (Edokpayi and Osimen, 2001; Ozoya, 2008; Aina, 2012).

1.7.6. Infrastructural facilities and social amenities in Esan

Esan West Local Government Area enjoys the presence of many infrastructural facilities especially schools which can be traced to Ambrose Alli, one time governor of the defunct Bendel State, now Delta and Edo States who hailed from Emaudo in Ekpoma. Paramount among these schools is the State-owned University located in Ujoelen now Christened after Ambrose Alli, as a way of immortalizing him for his indelible contributions to the development of Ekpoma, as well as the College of Medicine located in the same area. There are also several secondary schools scattered in the different units of the area. There is at least one government secondary school in every unit besides those that are privately-owned, such as Zana Private Secondary school in Eguare. Finally, there are also many primary schools in Ekpoma, both government and private. This shows the educational heritage of Ekpoma. However, this does not completely reflect in the lives of the women as a large proportion of them are still illiterate, especially deriving from the preference for male education to the detriment of the female.

There are also hospitals although most of them are privately-owned. These include *Okpebho* hospital in Ujoelen, Faith hospital beside the Local Government Secretariat opposite and *Oriafo* Specialist Hospital opposite the *Onojie'*s palace in Eguare. There are several banks and other financial institutions in Ekpoma. Modern markets are also present in Ekpoma.

There are some amenities, such as pipe-borne water, electricity and good roads, but these are grossly inadequate or non-existent in many settlements of Esan West Local Government Area. The drinking water available in the communities is often not hygienic enough for drinking. A few Boreholes exist in some parts often privately-owned. Many of those established by the government have become moribund and only remembered for the name they were associated with at the point of establishment, such as the popular Borehole Road in Uhiele area. Lack of good roads is also evident in the area, except Benin-Auchi expressway. The negative consequence of this lack is particularly seen in the difficulty experienced by rural women in the farming and marketing activities. The poor network of roads has equally obstructed the movement of goods in these communities and makes private transportation services, which are the most available ones, expensive, and is therefore a luxury to most residents (Obasohan, 2008).

1.7.7. Culture and tradition (myths, beliefs and festivals)

Most of the people in Esan West Local Government Area claim to belong to the Christian religion but there are a few Muslims among them due to its proximity to Agbede where Islamic religion is pervasive (Omorodion, 1991). There are also a few traditional worshippers. The area has a rich culture as evident in their unique delicacies such as *Uriema, Okpawhudo, Ebelanmenkhorkhor, oriwo,* among others. The esoteric culture of the people is also displayed in their unique dressing, which consists of elaborate use of coral beads on the hair, neck, wrist and waist (also on the ankle in rare cases). The dance mode of Ekpoma people is a special way of exhibiting its culture. The exclusive *Igbabonẹlimhin* dance is a popular dance among the Ekpoma people in the demonstration of their culture.

The common festival in the area is called *Ihuen*. It is usually held after the harvest season before a new planting season commences. It lasts for a period of three days with different activities slated for each day until the three days are complete. Friends and distant family members from other quarters usually come to celebrate the festival with those who are celebrating per time. The festival is held at different times in the various communities that make up the Local Government Area.

1.7.8. Family structure and inheritance rights in Esan

Polygyny, which is the marriage to more than one wife, is a common practice in Esan West Local Government Area. Some Esan men who do not have more than one wife maintain other extra marital relationships with other women aside their legally married wife (Bradbury, 1957). This arrangement is often not unknown to the wives at home. The existence of both co-wives and 'outside wives' gives rise to great envy and jealousy which often result in women inflicting harm and injury on their co-wives and co-wives' children. There exist traditional practices to check such envy and jealousy, such as the taking of oaths before shrines (Omorodion, 1993).

Inheritance is strictly by primogeniture where only the first son is made to inherit the father's properties usually where no legal will exist. The first son is expected, however, to utilize such properties for the well-being of his siblings and mother. Events have shown that this is not always the case, as most sons end up turning such properties to their personal assets to the detriment of his mother and siblings. This makes the point clear that

females, including wives, do not have inheritance right. They can only access such inheritance through the male son and a widow who does not have a male child is left to her fate (Omorodion, 2007; Obasohan, 2008).

1.8 Clarification of concepts

Agrarian community: An agrarian community is also known as an agricultural society. The community survives on the cultivation of crops with the use of crude implements such as cutlasses, hoes, plows and draft animals with huge dependence on rainfall. The first agrarian community is often traced back to as far as 5000 to 6,000 years ago in Mesopotamia and Egypt. However, not all the members of the population engage in agriculture in an agrarian community. Some of them engage in specialized, full-time jobs including blacksmithing, weaving, and pottery. A notable feature of the agrarian community is the immense inequality in power, privilege, and prestige that exist between the male and female gender. Literature shows that Nigeria is an agrarian country with about 70% of her over 170 million people engaged in agriculture. In this study agrarian community is defined as an area in which most people engage in the task of land clearing, plowing, rearing of animals, sowing, and harvesting of crops from day to day.

Agriculture: Agriculture involves the domestication of animals for meat and the cultivation of the soil for the purpose of food required for human survival. Agriculture remains the backbone of the economy of many developing nations including Nigeria. Land for agricultural production consisting of cropland, managed grassland, agro-forestry and bio-energy is known to occupy about 40-50 per cent of the earth's surface. Agriculture in this century is faced with multiple challenges. These include: the demand for more food and fiber to feed a growing population with a smaller rural labour force; the need for more efficient and sustainable production methods; and the challenge of climate change.

Agricultural extension services: Extension can be referred to as a political and organizational mechanism adopted to facilitate development. Such mechanisms range from technology transfer to problem-solving educational strategies to participatory programmes with the aim of poverty alleviation and advancing community involvement in the process of agricultural development. Agricultural extension services are conceived

in this study as the application of scientific research and new knowledge to agricultural practices through farmer education.

Dysfunction: Dysfunction refers to failure in the performance of a role or roles by the agency or institution to which specific responsibilities are committed. In this study, dysfunction of institutions refers to the non-performance of expected roles to the rural women farmers by the family, government, non-governmental organizations, multi-lateral agencies like the United Nations, among others.

Empowerment: It refers to the availability of the required knowledge and tools for a task to be actualized. In the context of this study, these include education, access to credit, access to advanced technology, ownership and control of land and participation in decision-making affecting the welfare of a rural woman. These are analyzed within the broader framework of government programmes initiated to enhance the productive capacities of rural women farmers.

Food production: This refers to the process of cultivation of crops from the preparation of the soil for planting to the point of product distribution. In recent times food production has been reported to be adversely affected by climate change in many parts of the world. Consequently the need to adopt clean or renewable energy in food processing is becoming popular. On a global scale, the agricultural food production chain consumes 30 per cent of the world's available energy and the agricultural food production chain produces about 20 per cent of the world's greenhouse gas emissions (Downing, 2015).

Food security: This refers to a state where all people have physical and economic access to safe, sufficient and nutritious food to meet their nutritional requirements for active and healthy life. Food security is attained through a food system. A food system encompasses all processes and infrastructure involved in satisfying the food requirement of a population through gathering/catching, planting, plowing, growing, harvesting, storing, processing, packaging, transporting, marketing, and consumption.

Gender: It is a concept used in social science analysis to look at roles and differences between men and women including their experiences as members of society. It is a concept that helps to classify the cultural definition of female and male according to their roles in society, rather than their sexes. The definition of these roles according to a

community eventually results in a division of labour based on gender. Gender, as a term, is not substitutable with women. It is used to discuss women and men alike. The components of gender are institutionalized through many avenues: education systems; culture and traditions; legislation; and political and economic systems. Consequently, focus on gender approach is not on individual women or men but on the systems that constitute gender access to and control over resources, roles / responsibilities, and decision-making capabilities. In this study, gender is considered as a social construct for the definition of the roles and responsibilities of men and women.

Infrastructure: Defining infrastructure has proved difficult due to its supposed origin on one hand and the differences in perspectives, interests, priorities, and concerns of the various users of the concept on the other hand. The term infrastructure is a comparatively new word in the English vocabulary. There are speculations that the term may have been derived from the word spelt in a similar way in French in the period of the19th century, as early as 1875 and may have been identified with the military (Edward, 2003; Moteff & Parfomak, 2004; Bowker, Baker, Millerand, & Ribes, 2010; Sahoo, Dash, & Nataraj, 2010; Beeferman & Wain, 2013; Edame & Fonta, 2014). The earliest use of the word in English is in 1927 contained in the Oxford English Dictionary, where the term was used to describe 'the tunnels, bridges, culverts, and 'infrastructure work generally' of French railroads. The use of the word in that way was to describe a sub grade, the original material underneath pavement or a railway bed. More specifically, the word infrastructure derives from a combination of the Latin prefix 'infra', meaning 'below' and 'structure' (Beeferman & Wain, 2013). In the English-language context, the link in the definition of infrastructure to the military seems to have been strongly more serious up in the early 1950s engendered by the increasing national security threats in America (Moteff & Parfomak, 2004). In this study, infrastructure is used to refer to such social amenities as good roads, effective transportation facilities, clean water, rural electrification, standard educational centers, health facilities, micro-finance bank, among others.

Inheritance: The process whereby wealth is transferred from one generation to another due to the demise of the original owner of the property. The right of women and children to inheritance differs from one society to another. In the Nigerian context, especially in Esan land, women do not have direct right to inherit their husband's properties because

she is a woman. In some cases, widows are regarded as properties to be inherited by the relatives of the deceased husband. In the same vein, female children do not inherit properties from their fathers because of the rule of primogeniture which permits only the male children to inherit their father's properties.

Land: It consists of the ground upon which farming activities occur as it is common in the agrarian communities. The definition of land has a spiritual connotation in African traditional societies as enshrined in their cultures. This is why decisions about land matters in rural areas are often based on customary laws rather than statutory laws.

Modern agricultural technology (MAT): This is also referred to as advanced farming technologies. MAT implies the techniques employed in farming that make cultivation and post-harvest handling easier and ensure efficiency and effectiveness. These include tractors, silos, fertilizers, herbicides, improved seedlings, dryers, and mills.

Patriarchal society: It refers to a society in which family authority is vested on the man and he has dominant control over family affairs. Patriarchy also refers to male domination both in public and private circles. Among feminists, the term 'patriarchy' is used to refer to the power association between men and women, as well as to find out the root cause of women's subordination in many societies. In a patriarchal society as practiced in Esan land, lineage is traced through the male children.

Policy: A policy is a statement of intent on how affairs are to be directed as dictated by a political party, business or company. It can mean the intended on the guidelines on the actualization of plans and programmes by the government. In this study, it is taken as the deliberate measures embarked upon by government and other relevant agencies towards the realization of established goals aimed at generating positive influences on the lives of its citizens, specifically rural women farmers. A typical example is the national agricultural policy by the Nigerian government.

Role: A role is described as the expectation attached to a position. Roles are expected to be consistent with a person's status. In relation to institutions, roles refer to the functions, duties or responsibilities of an institution.

Rural area: This refers to a locality, such as a village or countryside. The problematic associated with the definition of a rural community has been widely documented.

However, it can be conceptualized using various criteria, such as population and occupation. In most cases the population criteria holds sway as in the Nigerian situation. In this study, a rural area is defined as an area having most of its population employed in agricultural production and with a population of less than 20,000. It can also be described as a place that suffers from the disaggregation of social facilities or infrastructure.

Rural women: Adult females who reside in agrarian communities are known as rural women. They often rely on land cultivation for survival because they are predominantly farmers. Their vital role in agriculture has been globally recognized such that the International Fund for Agricultural Development (IFAD) has declared that rural women hold the key to attaining global food security. Subsistence agricultural producers in Nigeria account for 80% of all farm holdings, consisting mainly of women. The Federal Ministry of Agriculture & Rural Development reports that women account for 75 per cent of the farming population in Nigeria, working as farm managers, and suppliers of labour.

Subsistence agriculture: It is the type of agricultural activity that has the members of the household as the basic or primary consumers of the farm produce, such that selling out of the produce is only a second thought. This is what is obtainable among most rural women farmers as they are limited in agricultural production engendered by their lack of production inputs such as land, modern agricultural technology, and credit facilities. Focus is on small portions of land and means of cultivation is mostly crude implements such as cutlass and hoes.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Literature review

This chapter contains the review of related literature, an exploration of the theoretical framework, a presentation of the conceptual framework, and finally the presentation of hypotheses for the study. The literature review begins with an exploration of the trend in global food security research and the discussion of the concept of empowerment. This is followed by an examination of access and ownership of farmland by rural women farmers. In addition, access to modern farming technologies and food production is reviewed. An assessment of the impact of agricultural extension services and farmers' education on food production comes next. Gender and Development (also known as Empowerment theory), and the structural-functionalist theories are discussed in the theoretical framework. The chapter concludes with the presentation of the conceptual framework.

2.1.1 General overview of global trend in food security and production

It is pertinent to begin with the concept of food insecurity. This term is often associated with risk; hence food insecurity portends a situation of 'food at risk'. According to the World Food Conference, this risk could be stimulated by 'widespread crop failure, natural or other disasters' (UN, 1975). Maxwell and Smith (1996) elaborated on this by adding other factors such as variability in crop production and food supply, risk in employment and wages, and risks in health and morbidity, market and price variability. Conflict is very notable here as it is capable of interrupting markets, cause withdrawal of labour from productive activities, and in extreme cases disrupt and displace entire communities. Dowler (2003) notes that 'food poverty' is a similar word for referring to food insecurity. This observation brings in a broader thinking about food security as beyond physical efficiency of food consumption but also including the ability to access and consume an adequate quantity or quality of food in socially acceptable ways, or the doubt that one will be able to do so.

The initial stage in the use of the concept of food security was mainly restricted to national analysis of food supply. However, in recent years, there has been a shift to

household level analysis. Household food security describes the ability of household food structures to withstand crises threatening to reduce the achieved degree of food consumption. In a nutshell, food security is the availability of food which individuals are entitled to and which they can actually access in the expected proportion and at the right time.

The concept of food security emerged in the 1970s following the recognition of food as a vital determinant of well-being by the Universal Declaration of Human Rights in 1948 and, especially the global food crisis of 1972-74. Its popularity in the 1980s was engendered by three forces. The first was the experience of African famine in 1984-85; the second was the shift in policy debate from food demand to food supply during the structural adjustment programme (SAP) as a proxy term for poverty and the third force was the departure from nutritional planning anchored on the entitlement theory to household food security (Anyanwu, 1992). The term was used mainly in the 1970s with national and global food supplies. The 1980s, however, witnessed a shift in the use of the term to questions of access to food at household and individual dimensions. There was yet another paradigm shift in the 1990s with concepts such as flexibility, adaptability, diversification, and resilience becoming the frequent terms (Hendriks, 2005; Maxwell & Smith, 1996; UN, 1948).

According to Maxwell (1996), the proliferation and progressive development of food security definitions reflects an international shift in thinking about food security. It further presents a clue in the difficulties associated with an attempt to adequately describe and measure the varying and multiple contributing elements leading to hunger and malnutrition. In addition, progressive in definitions reveals a diversion of focus from objective to subjective measurement scales such as cultural adoption of foods and fears of experiencing hunger. It is evident that food security constitutes a vital parameter for the measurement of wellbeing but it does not encompass all aspects of poverty. Definitions of food security are varied in numbers and context; hence by 1996 more than 250 definitions of the concept existed. Hendriks (2005) asserts that such definitions usually revolve around food supply, access, adequacy, utilization, safety and, in some cases, cultural acceptability of food for all people at all times. Thus, food insecurity is simply the lack of food security that can culminate in hunger (Hendriks & Maunder, 2006).

The International Food Policy Research Institute (IFPRI) disaggregates food security into three pillars; food production, food access and food utilization. No doubt, food security requires household activities for both caloric production (and processing) and gaining income to purchase food, but women must consider and adapt to new opportunities and constraints while ensuring their families basic food availability (Agarwal, 1985; IFPRI, 2005a; Quisumbing, Brown, Feldstein, Haddad, & Pena, 1995; Mgonja, Kuwite, Mushi, Mduruma, & Mmbaga, 2000).

Food security has been generally agreed to be a global challenge. It, therefore, requires the efforts of every community as well as individuals, especially in the invention of technologies that will immensely boost efforts in this regard (FAO, 2003). The development of technology for women in agriculture is also available on a national platform with some government and non-government agencies, such as Federal Institute of Industrial Research, Oshodi (FIIRO) and National Centre for Agricultural Mechanization (NCAM). Evidence shows that the aforementioned assistance has been highly inaccessible to rural women. Where it is available, the social compatibility with the knowledge base of the women is usually lacking, thus rendering the effort futile (FANTA, 2002; Akanji, 2001). This, therefore, provides an explanation for the low returns witnessed in farming by smallholder farmers, despite their enormous degree of involvement in farming, which in the long run produces a decline in household food security, and global food availability to tackle hunger.

2.1.2. The concept of empowerment and its history

The conceptualization of empowerment varies widely. As such, Mehra (1997) cautions that effort must be made to ensure the definition of empowerment can be quantified and measured depending on the particular context. Literature shows that many writers accentuate 'agency' as an essential element of women's empowerment, although they use different terms. The Nigerian government has demonstrated an interest not only in improving women's economic status and well-being but also in empowering the women themselves to obtain improvements in their lives.

The effort to measure empowerment is often faced with challenges as there are often contradicting general set of indicators. Consequently, Santillan, Schuler, Anh, Minh, Trang, & Duc (2004) have observed that:

> *Although general 'domains' or 'dimensions' developed in one setting may be transferable to another, specific indicators will need to be developed in any given setting, taking into account the purpose for which they are to be used (p. 536).*

Deriving from the growing focus on women's empowerment, there has been a corresponding rising body of literature attempting to define the concept. Definition of empowerment in broad terms is often situated within two concepts – process and agency. With respect to women empowerment, empowerment as a process is seen as the development of policies and programmes that will enable girls and women to challenge current norms and change conditions. Mehra (1997:138) also notes that 'the definition of empowerment should include the expansion of choices for women and an increase in women's ability to exercise choice'.

Kabeer (2001) defines empowerment as "the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them". Malhotra *et al.* (1995) concur with the definition by emphasizing that the definition highlights a transition from relative powerlessness to greater equity in the exercise of power and as such differentiate "empowerment" from the general concept of "power", as espoused by dominant individuals or groups. They argue further that to be considered 'empowered', women themselves must be significant actors in the process of change. That is, women must engage in agency. For example, health and development strategies may support or enable women's empowerment, but they cannot provide empowerment as if they were health services or commodities themselves. According to Santillan *et al.* (2004),

> *Women's agency is often expressed in terms of women's ability to make decisions and affect outcomes of importance to themselves and their families or, put another way, as women's control over their own lives and over resources. 'Process', the progression to a state of greater equity is a second element of empowerment emphasized by many writers on the subject (p. 546).*

They argue further that the definition proffered by Kabeer (2001) provides a basis to differentiate "women's empowerment" from the related concepts of "gender equality" or "gender equity". This is because a transformation towards gender equality or greater gender equity would not be described as "empowerment" unless women had been agents of that change.

Some criticisms have been made on how empowerment approaches are being promoted in recent times. Prominent among these criticisms is that advanced by Batliwala (2007a), who posits that empowerment has been 'abused' as the mainstream approach taken by recent gender scholars end up taking the 'power' in empowerment out, thereby making the whole essence defeated. She described this as the

> *... distortion of good ideas and innovative practices as they are lifted out of the political and historical context in which they evolved and rendered into formulas that are 'main streamed'. This usually involves divesting the idea of its cultural specificity, its political content, and generalizing it into a series of rituals and steps that simulate its original elements, but lacking the transformative power of the real thing. Thus good ideas - evolved to address specific development challenges - are altered into universally applicable panaceas. Transferring the correct rhetoric - buzzwords and catch phrases emptied of their original meaning - is a vital part of this legerdemain* (Batliwala, 2007a:89).

There is a consensus among scholars that access to land, farming technologies, agricultural extension services and microcredit are fundamental to the empowerment of rural women farmers in boosting food production and ensuring global food security (Santillan *et al*., 2004; Gupta & Yesudian, 2006; Abu-Lughod, 2009; Pitt, Khandker, & Cartwright, 2006; Schuler & Rottach, 2010; Khan & Bibi, 2011; Njoh & Akiwumi, 2012; and Tarozzi, Desai, & Johnson, 2000).

The emergence of women empowerment is traceable to the feminist movements of the 18th century in Europe intensified with the publication of *A Vindication of the Rights of Women: With Structures on Political and Moral Subjects* (1792) by Mary Wollstonecraft, followed by *The Enfranchisement of Women* (1851) by Harriet Taylor Mill and *The Subjection of Women* by John Stuart Mill (1869). This movement was accompanied in America by the publication of *The woman's bible* (1895) by Elizabeth Cady Stanton alongside 26 other feminists (McMillen, 2008). Their agitations were geared towards directing attention to the fact that women were being discriminated against in many ways thereby breaching their rights. The overthrow of patriarchy or 'patriarchal equilibrium' was a major driving force (Bennett, 2006:54). According to Motta, Fominaya & Eschle (2011), feminist activism has been targeted at projecting the poverty, inequality, exclusion, alienation and violence women face in society.

In Africa, women activism began to surface in the middle of the 20th century, facilitated by the increasing independence of many African nations (Berger, 2008). However, most of the agitations were not theoretical as in the case of Europe and America which utilized the power of the press media through publications; although that later emerged (Kolawole, 2002). The attempt to adopt the same pattern of activism in the Europe and America was highly hampered by the differences in language. Nevertheless, events showed that African women did not relent in their struggles for emancipation despite this limitation (Kolawole, 2002).

Prior to the book by Ester Boserup titled *Woman's Role in Economic Development* in 1970, there were other scholars who published books reflecting the plight of African women though not directly stating that women were under subjugation. In some cases, the writers never considered themselves as feminist writers. Nigeria's first female novelist, Flora Nwapa, author of Efuru (1966) amongst other books, and Buchi Emecheta, author of more than twenty books including the *Bride Price* (1976) fall into this category. According to Ogunyemi (1985), Nwapa asserted, *"I don't think that I am a radical feminist. I don't even accept that I am a feminist. I accept that I'm an ordinary woman who is writing about what she knows"*. According to Mikell (1995:2), Buchi Emecheta declared, while delivering a speech at George Town University that, *"I have never called myself a feminist…"*

It follows then that the history of African women's movement was mainly action-based. Their activisms were communicated through such ways as music, fashion, charisma, political influence, and riot (Afigbo, 1966; Nwabughugu, 1982; Weir, 2007; Salami, 2010). Some cases are notable. In Nigeria, Funmilayo Kuti (1900-1978) and Margaret Ekpo are notable in the feminist struggle in Africa. Mrs. Ransome-Kuti's activism led to the establishment of Abeokuta Women's Union (AWU) and Women's International Democratic Federation (WIDF) in the late 1940s. These were organizations and movements that aided Kuti to promote women's rights to formal educational trainings, political participation and employment. One of her notable protest with her AWU members was that which was against Alake of Egbaland, King Ladipo Samuel Ademola 2, when he wanted to impose taxes on women. They protested with the slogan 'no taxation without representation'. The women contended that since they were not regarded

as equal members of society, they should not be asked to pay taxes (Peel, 1980; Adebiyi, 2008).

Margaret Ekpo (1914-2004) promoted her political activism with her fashion skills. She organized with Mrs. Ransome-Kuti in the 1950s to protest the killings at an Enugu coal mine. In 1954 Ekpo created the Aba Township Women's Association, which later afforded her the opportunity in 1961 to win a seat to the Eastern Regional House of Assembly. This position gave her a greater platform to promote women's issues (Etim & James, 1999). The activism of Ruth Kharma of Botswana (1923-2002); Marian Makeba (1932-2008) and Winnie Mandela (1936-) both of South Africa, against apartheid, especially as it relates to women, is worth noting. Earlier African feminists include Adelaide Casely-Hayford of Sierra Leone (1868-1960), Charlotte Maxeke of South Africa (1874-1939) and Huda Sharaawi of Egypt (1879-1947) (McClintock, 1993).

The United Nations (UN), which was established in 1945, adopted and proclaimed the Universal Declaration of Human rights in 1948. Article one of the Declaration stated that "All human beings are born free and equal in dignity and rights" and article two added that "Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status" (UN, 1948) All member countries of the United Nations, including Nigeria, who later joined in 1960, were bound to abide by this Declaration.

As a global effort to promote the course of women, consequent upon the rising intensification of feminist movements in the 1970s, the General Assembly of the United Nations declared 1975 as the International Women's year. During the year, the General Assembly organized the first World Conference on Women, which was convened in Mexico City. The outcome of the meeting was the declaration of 1976-1985 as the UN Decade for Women followed by the approval of a voluntary fund for the decade. After the first world conference on women, three other sessions have been held, namely, Copenhagen (1980), Nairobi (1985), and Beijing (1995). Remarkably, the Beijing Declaration and Platform for Action has become the basis upon which the progress in women empowerment is assessed. Furthermore, the United Nations, included gender equality and women empowerment as goal number three in its Millennium Development Goals in 2000. This was followed by the amalgamation, in January 2011, of UNIFEM

into UN Women, which is a composite entity of the UN. This was in conjunction with International Research and Training Institute for the Advancement of Women (INSTRAW), Office of the Special Adviser on Gender Issues (OSAGI), and Division for the advancement of Women (DAW). The actions were geared towards instituting policies that will promote women's access to political power and productive resources such as land, technology and credit facilities (Abu-Lughod, 2009).

The African continent contributed her quota to women empowerment through the African Union by declaring the year 2010 to 2020 as the African Women's Decade with the theme: *Grassroots Approach to Gender Equality and Women's Empowerment (GEWE).* The theme reflects a commitment of the Union to instituting programmes that will stimulate rural development thereby evolving women's empowerment from bottom-up (rural to urban). This was delightedly in contrast with the prevailing trickle-down approach in existing development programmes (Martin, 2013). This move was borne out of the increasing evidences that the inclusive participation in decision-making and exposure to gender related matters through capacity building, education and women's empowerment, among others, are necessary to achieving gender equality in every society (Boserup, 1970). The grass root approach is necessary to close the gender gap in agriculture in order to generate significant gains for the agriculture sector and for society in general (FAO, 2011; Iruonagbe, 2011).

The focus of the theme for the African Women's Decade was categorized into ten divisions. The second division was centered on agriculture and food security. The goals were articulated as follows:

1. Achieving Food Security and Fighting Hunger;
2. Increased Women access to agricultural land, farm inputs, credit, technology, extension services, irrigation and access to water through water harvesting, boreholes, among others; and
3. Link women to markets through value addition of their products including agro-based supply chain, creating new markets for their produce including organic food stuffs.

In the Nigerian context, the Beijing Platform for Action (BPA 1995) addresses the concerns of rural women although there is no separate section for their needs and priorities (Aina, 2012).

The following facts can be deduced about the concept of empowerment due to the amorphous nature of the concept:

1. There is no universally accepted definition of empowerment.
2. Empowerment is a complex process.
3. Since empowerment has different meanings in different contexts, a behaviour that signifies empowerment in one setting may indicate something else in another. For example, belonging to self-help group may indicate empowerment in Northern Nigeria, but not in Southern Nigeria.
4. Within a particular setting, the ways in which empowerment is manifested are likely to vary over time, as social norms change.
5. Empowerment is multi-dimensional as someone who is empowered in one aspect of her life might not be empowered in another.

2.1.3. Access and ownership of land by rural women as panacea for increasing food production

Distinct roles exist for men and women within the farming system in most societies. Such differences in rural farming households contrast widely across cultures although certain features are common. In many contexts, women tend to concentrate their agricultural activities around the family mainly because of their domestic and reproductive roles. Women play a critical role in food production, post-harvest activities, and livestock care. Owing to the common situation that certain task activities are regarded as “male” or “female” in some setting, a rigid division of labour exists between men and women, household members have distinct income and expenditure while in another area, division of labour and specialization of tasks is less rigid and not skewed. Despite women’s high dependence on land for the farming activities they do not have right to own land. They can only have access to land through their fathers or through a portion allotted to them by their husbands (Doss, 1999; Edewor, 2014; Fakoya, Apantaku & Adereti, 2005).

Land occupies a paramount place among the resources available for human survival. The existence of humans is largely dependent on land as it constitutes the platform for which

human activity and development occurs (Hussein & McKay, 2003). The dynamics surrounding land is vital to sustainable growth, good governance and the well-being of individuals in society (Edewor, 2014). Such forces also determine the economic opportunities available and accessible by both the poor and the rich in society (Deininger, 2003).

Globally, land is known to be a product of wealth either through investment on it such as houses or through lease or outright sale (Hussein & McKay, 2003). All these avenues attract wealth to a landlord. High value for land is even more situated in Africa, as many Africans consider land as possessing some spiritual connotations which make it a very sacred asset (Iruonagbe, 2009b).

Land policy is often what prescribes rights to land in a modern society. It stipulates who can access and own land, by what means, among others (Deininger, 2003). However, crisis often emerge in the implementation of such policies especially in developing countries. Such conflict is what has engendered the ongoing debate on the popular phrase 'the land question' among African researchers. Land struggle has remained an ongoing phenomenon for African countries, which usually emerge for many of these countries after independence as is the case in Kenya, Namibia, and Nigeria (Hunter, 2004; Moyo, 2008; and Moyo, 2013). In the context of a traditional community, the land question often takes on a gender analysis. It interrogates the inequality of access and ownership of land by the male and female gender. According to Moyo (2008:91), *The key land question here remains women's access to and control of land, which is inadequate and constrained by various customary and generally patriarchal social relations.*

Majority of the world's food are produced by women yet they lack access and control of land even though it is clear that the pattern by which land is allocated and regulated have an important place in determining how resources can be utilized (Ratcliffe, 1976). Okojie (1998) makes it clear in spite of symbolic association between women and the land, as well as the popular cultural perception of earth as mother, women own only 1 per cent of the world's land. Over the years, research has shown that the female gender suffers denial of access and ownership of land by the male counterpart globally, especially in Africa (FAO, 2002; UNFPA, 2004; Iruonagbe, 2010e). The paucity of data regarding women's

ownership, control and management of land has been widely acknowledged (PIM, 2014). Moyo (2008:91) also notes that:

> *Unequal gender relations regarding land control and use have over time worsened and deprived women of their land rights in many parts of the continent, reduced the extent and quality of the land rights that they continue to hold, and failed to cater for the new forms of land rights and the growing land needs of women. Women's land rights are insecure and inadequate for their ascribed roles as key agricultural producers and as the custodians of children as well as of the family livelihood in rural and urban areas.*

Table 2.1 reveals how marginalized women are regarding ownership of land. It shows the percentage of ownership of cultivated land by women farmers in Thailand, Trinidad, Nigeria, and Syria.

Table 2.1: Percentage of ownership of cultivated land by women farmers in Thailand, Trinidad, Nigeria and Syria

Land ownership	**Thailand (%)**	**Trinidad (%)**	**Nigeria (%)**	**Syria (%)**
Personally owned	22	9	4	-
Husband owned	39	30	23	41
Gift from husband	-	-	30	
Family land	10	9	12	36
Government land	-	25	-	-
Communal land	-	-	20	-
Squatted land	-	9	-	-
Rented land	29	19	11	22.5

Source: *Manju. Dutta Das*, FAO, 1995 as cited in Iruonagbe (2010d).

Table 2.1 reveals that a typical African woman can only gain ownership of land majorly through her husband. And such ownership is relinquished in the event of the husband's death because she has no inheritance right for her husband's properties, including land. Instead she is considered as one of the properties to be inherited by the family of the late husband (Adepoju 1997; Orebiyi, 2002; Tuyizere, 2007; Iruonagbe, 2010a).

In Nigeria, specifically in Ozalla community, Iruonagbe (2010d:7) notes the following:

> *…once a woman loses her husband, her inheritance is in terms of liabilities than assets. She is subject to sexual harassment from young in-laws who view her as part of their relative's property to be inherited. Since they have no control over land and are often in subordinated positions, they are subjected to dehumanizing treatment from male relations and male in-laws if request for land is put forward to them. Even when such requests are granted, they suffer from inconsistent and temporary use of land despite their contribution to food production in the community.*

It is clear, therefore, that the explanation of the prevalence of women's denial of access and ownership of land in several countries of Africa is located within the larger framework of the structure and culture of the African society. The major forms and sources of this unequal land distribution and tenure problem emanate from the dominance of patriarchy and customary land tenure systems, and local authority structures (Moyo, 2008). Most African countries operate a patriarchal structure, which emphasizes male dominance over women, hence an unequal gender relation. This is what obtains in Nigeria. A typical Nigerian woman is socialized into a culture of female subordination. Such subordination is not only to her husband but also to the men in her family as well as to the members of her husband's family both male and female (Edewor, 2006; Iruonagbe, 2010c).

In terms of culture, the custom of a community stipulates the use and ownership of the common property. The customary treatment of men and women in Nigeria is one that is detrimental to the wellbeing of women. Women experience discrimination imposed on them by customary laws, which often prevail upon traditional matters in a greater proportion than statutory laws (Iruonagbe, 2009a). It should be stated that women's access and ownership of land is essential for the attainment of food security for all people. Gender-based discrimination pattern in local land administration processes needs reforms. Issues of unequal land allocation procedures, ambiguous rules and regulations

surrounding land tenure and use rights, and inequitable systems of access to related resources are critical towards ensuring food security for the rich and the poor.

2.1.4. Access to modern farm technologies and food production

Farming is a multifaceted concept involving the entire process of cultivation: clearing the fields, planting, weeding, harvesting, marketing, provision of credits, transport, processing among others (Ojo, Bila & Iheanacho, 2015). In Nigeria, about 80 per cent of the labour force of the total population is believed to be engaged in this occupation. This is made obvious with the fact that Nigeria is an exporter of primary products to the international market. Thus, it is still considered an agrarian economy. Farming technology remains unsophisticated in Nigeria, especially among the smallholder farmers, who contribute the bulk of the food needed for the feeding of the nation's citizenry. Mechanized farming is common among private owners, who are only a handful and scattered across the whole nation. This situation makes clear the obvious insufficiency of food to cater for the teeming population (Akanji, 2002, Williams, 2002). Literature is replete with evidences that women are involved in virtually all aspects of farming as indicated in Table 2.2.

Table 2.2: Distribution of women according to tasks performed in agriculture in Northern Nigeria, 1990

	Degree of Involvement				
Type of Task	**Very High**	**High**	**Low**	**Very Low**	**Not Involved**
Land clearing	146(38.8%)	125 (33.2)	15(4.0)	10(2.7)	95(25.3)
Ridge making	112 (29.8%)	119(31.2)	29(7.7)	15(3.9)	101(26.9)
Planting	189(50.3%)	100 (25.7)	10(2.7)	6 (1.6)	71(18.9)
Thinking	105(27.9%)	135(35.9)	25(6.7)	5(1.3)	106(28.2)
Fertilizer application	137(36.4%)	119(31.7)	43(11.4)	7(1.9)	70(18.6)
Weeding	116(30.9%)	129(34.3)	33(8.9)	13(3.5)	85(22.6)
Harvesting	149(39.6%)	104(27.7)	25(6.6)	12(3.2)	86(22.9)
Storage	131(34.8%)	97(25.8)	52(13.8)	8(2.1)	88(23.4)
Processing	97(25.8%)	99(26.3)	64(17.0)	12(3.2)	104(27.7)
Marketing/Distribution	68(18.1%)	110(29.3)	72(19.2)	16(4.3)	110(29.3)

Source: Yahaya, K.M. (1995) in Baklit (1997 p.84)

The involvement of household members in farming activities is an act that can be traced to the very origin of agriculture itself, as it was a family affair – father, mother and children, as it was the only existing occupation then. As far back as 1870s among the Ondo people of Nigeria, it was noted that men, women and children cultivated lands (Ojo, 2001). *Men were known to initiate the cultivation and further took responsibility for bush clearing, tree felling, bush burning, and heaping. On the hand, women participated in their usual roles of weeding, harvesting, transporting, processing.* This implies that there existed a clear division of labour, though unwritten, defining the patterns of the work done by men and women. According to Fakoya *et al.* (2006), these roles are often socially defined and perpetuated by the beliefs and tradition of a particular culture.

In recent time, children's involvement in farming has come to be identified in the literature. Their involvement in farm work has come to be a focal point in contemporary times with the emergence of formal education and the concept of 'child abuse'. The discourse surrounding the contributions of farm children, therefore, revolves around the extent to which their involvement impacts on the chance to attend schools and the degree to which it impacts on their health; hence it interrogates the abuse of the right of the child to education and parental care. With the full understanding of women's deep involvement in farming, it becomes discriminatory to limit their access to modern farming inputs.

Technology is part of infrastructure. Rural infrastructure can be classified into three (Khan, 1979; Ogunnowo & Oderinde, 2012):

(a) physical infrastructure such as roads, water, rural electrification, storage and processing facilities;

(b) social infrastructure namely, health and educational facilities, community centres; and

(c) security services; Institutional infrastructure like credit and financial institutions, among others.

Access to advanced farm technologies by rural women is vital and will enhance their food production. Hillebrand, Messner & Meyer-Stamer (1994) describe technology as consisting of four dimensions:

i. the hardware (machinery or equipment) of production;

ii. the software (knowledge and skills needed to produce something);

iii. the organization that enables production to take place; and

iv. the product itself.

There are often two types of technologies, namely; local and modern. Local technologies are often of small-scale size, simple operations, cheap and made of indigenous materials. Modern technology, on the other hand, is often of large-scale, expensive, profit-oriented and of complex operations (Bob, 2004).

According to Bob (2004), various expressions are often used to describe technology which is developed and utilized at the local level. Such terms include indigenous, alternative, appropriate, adoptive, self-reliant, intermediate, and people's technology. Most peoples who use indigenous technology often belong to the groups that are traditionally marginalized; have low profile; and low social status. These include women, the landless and the rural poor.

A focus on indigenous knowledge system, technology and women encourage the following (Bob, 2004:293):

i. a-rethinking of what technology is;

ii. technology knowledge (re)generation through different types of research;

iii. sharing alternative knowledge and experiences, specifically in terms of tapping locally-based and indigenous know-how;

iv. more effective and integrated use of local resources, both human as well as natural resources;

v. promoting ecologically sound technologies for women;

vi. using existing know-how and indigenous-based technologies, sustainable livelihood strategies and income generating opportunities;

vii. building local and institutional capacity among women relating to technology development and use

viii. understanding problems/challenges and helping in the search for appropriate solutions

ix. preservation of cultural heritage; and

x. end users of specific projects to be involved in developing technologies appropriate to their needs.

Women farmers need both local and modern technologies to achieve enhanced food productivity. According to International Institute for tropical Agriculture (IITA, 2005), several machines are made available by the Institute through the Integrated Cassava Project (ICP). This is expected to be of immense assistance to rural women farmers in Edo State because cassava is their major farm crop but literature has shown that these are absent among rural women farmers in the State (Ozoya, 2008).

The following are some of the machines as presented by National Centre for Agricultural Mechanization (NCAM):

i. Cassava lifter (see Appendix VI)

It is manufactured for uprooting cassava. It is made up of a frame that has a footboard and immovable griping jaws attached, a lever (handle) which is hinged to the frame.

ii. NCAM Peeling Tool (see Appendix VII)

It is a high quality peeling blade with a handle made of mild steel.

iii. IITA Peeling tool (see Appendix VIII)

It is for cassava peeling. It is Simple, can be fabricated locally, Uniform peeling, Minimum peeling loss, Easy grip providing maximum safety, and for varying sizes of cassava.

iv. PRODA peeler (see Appendix IX)

It is more sophisticated than the peeling tool.

v. 2-Action Zone Peeler (see Appendix X)

More advanced than the first two peelers above and it works in two ways.

vi. Cassava washing machine (see Appendix XI)

It is designed for washing cassava before grating.

Storage facilities have posed several challenges to rural women as they have to depend on crude methods to store their farm produce from perishing. This makes availability of food after the harvesting season scarce and sufficient income is often not generated as the produce cannot last long enough to be available for those who will demand for them beyond the harvest season.

The need to occupy ourselves in the twenty-first century with rational, equitable and sustainable application of the natural resources that promote worldwide food supply, such as labour, land, clean water, oil and other agricultural inputs, is fast becoming widespread as the consequences are biting hard on both rural and urban dwellers. It is now clearly acceptable that neglect in this regard will engender starvation (Hodges, Buzby & Bennett, 2011). World population is expected to reach 9·1 billion by 2050 which requires a 70 per cent increase in food production (FAO, 2011).

According to a report by Edo ADP (2002), less than 5 per cent of Nigerians are food secure, 65 per cent are semi-food secure. Over 30 per cent of Nigerians are facing the problem of food insecurity. This underscores the necessity of evolving modern storage and processing techniques. This stark reality is mostly evident among rural women who produce a considerable amount of food crops yet do not have adequate facilities for processing and storing such produce. Such capacity has been usurped by multinational companies due to their access and ownership of huge capital. Weis (2007) buttresses this reality thus:

> *agro-food TNCs are controlling, refining, combining, distributing and marketing what is being produced on farms in expansive new ways, and systematically detaching food consumption patterns from time, space and cultural traditions with long-distance sourcing and distribution networks, sophisticated processing and packaging systems that reduce perishability.*

Lack of modern storage and processing facilities despite their huge involvement in food storage and processing, has been widely documented in the literature (Rahman & Routray, 1996; Imonikebe, 2010a).

According to a research conducted among women in Nigeria by Imonikebe (2010a), lack of post-harvest facilities was mentioned among the constraints to Rural Women Farmers' Involvement in Food Production in Nigeria. The study was aimed at identifying the problems faced by rural Nigerian women farmers engaged in food production and how those problems could be solved. The sample was made up of 3,500 persons from Ogun, Edo, Anambra Lagos, Osun, Delta, Ondo, Enugu and Oyo States of Nigeria. Findings revealed that the major problems encountered by the rural women farmers in Nigeria were poverty, illiteracy, lack of storage facilities, poor health status and poor yield. Part of the findings is recorded thus:

> *Heavy losses occur during and after harvest. The food losses include weight loss, loss in quantity and acceptability of foodstuffs. The causes of these losses are attributed to chemical changes that occur in food, attacks by micro-organisms; exposure of food items to high temperature and high relative humidity; unhygienic way of handling foodstuffs; attacks by insects/rodents, wrong methods of harvesting, poor methods of storage, processing, poor handling of food items during distribution to consumers (Imonikebe, 2010b:137).*

Consequent upon the use of poor storage facilities, use of poor storage methods and poor processing methods, post-harvest food losses are high in Nigeria. It is clear, therefore, that high post-harvest loss is one of the main avenues of food waste, thereby reducing food security. Ignorance of people on how to maintain food security is a common problem. As such, the need to empower rural women with modern storage and processing facilities can be understood within the context of the massive waste that occurs after harvest and the impoverishment that women experience consequently.

2.1.5. Extension service agents and food production

Agricultural extension services are known to be important in serving as a cost-effective method of boosting the productivity and income of farmers (Adesiji, Kehinde & Omotesho, 2013; Galie, 2013). According to the report of Global forum for Rural Advisory Service (GFRAS, 2012), the following facts describe the state of extension services globally:

i. Investment in extension yields 80% annual rates of return (40–60% is the norm).
ii. Educating farmers can help to double crop yields.
iii. In 1988, US$6 billion was invested in extension globally.
iv. In 2009, US$582 million of World Bank funding went to research and extension – about 10% of the overall spent on agriculture.
v. Around 43% of rural workers are women but only 5% of women have access to extension services.

It has been noted that extension services enable farmers to adopt current innovations, boost food production sometimes as high as 13–500%, and protect the environment. However, efforts at obtaining data on the effects of extension trainings pose a great challenge due to the divergence on farmers' access to extension services across various communities (FAO, 1993). Nevertheless, positive impacts have been recorded in certain countries as more farmers access extension services. Such positive outcomes have been observed in China, Vietnam and Indonesia. In China and Vietnam, it is estimated that there is one extension worker per 280 farm households, Indonesia reports that each extension worker covers about 2.8 villages. Furthermore, a programme with cacao farmers in Peru has been reported to have resulted in productivity increase from 340 to 600 kg per ha in three years (GFRAS, 2012).

Though women play a central role in agriculture across Africa, including Nigeria, most of them are often bypassed in agricultural extension trainings (Rousan, 2005). Adesiji *et al* (2013) attribute the prevailing negligence of women farmers by extension agents to women's "limited control over assets and decisions and systemic biases that are evident in agricultural institution throughout Africa and much of the world". A major asset over which women lack control and ownership is land. IFAD (2007) notes that a significant portion of the income of the rural poor comes from farming, the report therefore recommended that democratizing access to and control over land and water resources is crucial for empowering women.

Extension services are often tailored according to the type of crop mostly cultivated in that area. In Nigeria, different parts of the country have different crops that flourish due to the difference in rainfall and soil texture. The northern part is known for such crops as

groundnut, wheat, millet, sorghum, potatoes, tomatoes, onions and carrot. The concept of 'groundnut pyramid' still continues to exist in the literature even though they have disappeared. The eastern part is known for palm oil, palm wine, plantain, banana and plenty of sea-foods. The western part of Nigeria is known for cocoa, oranges, yam and cassava. The predominance of cocoa in the west stimulated the construction of the 'Cocoa House' located in Ibadan, Oyo State. Pitiably, this edifice is highly underutilized today. The Southern division of the country has a favourable soil for the cultivation of rubber, cassava, cocoa, cotton, melons, yam, rice, oranges, oil palm, beans, pepper and fluted pumpkin.

The Niger Delta located in this part which would have contributed immensely to the availability of sea-food has been incapacitated by the activities of petroleum and gas industries resulting from oil spillage. Finally, the middle belt has abundance of rice, maize, yam, garbage, onions and sea-foods. Among these crops, cassava has become remarkable deriving from its transformation from a food crop to a cash crop. This was instigated by the breakthrough made by IITA in the 1970s (Ojo, 2001; Daramola, 2005; Okoduwa, 2007).

The origin of agricultural extension can be traced to the colonial era in Nigeria. It started with the promotion of export crops such as cocoa, rubber, timber, and cotton. It is not, therefore, surprising that this has not been successfully extended to advance the production of food crops. Extension services have undergone several approaches in Nigeria. These include the special commodity service, farm settlement scheme, River Basin Development Authority, the National Accelerated Food Programme and the Operation Feed the Nation. In 1986, the Training and Visit extension system was introduced. However, these have failed to produce expected results.

Women-In-Agriculture (WIA) in Nigeria is a branch of the Agricultural Development Projects (ADP). Report has shown that they have made important progress in different States of the Federation by incorporating gender in agricultural extension, modifying the ADP system midstream to provide for women farmers through the creation of programmes in the department of Extension Services of the affected States with a gender focus (Odurukwe *et al.*, 2006).

The WIA programme designed avenues to improve agricultural extension services for women. Such avenues involve the retraining of existing agents in agriculture and extension methodologies as well as emphasizing women's activities. In addition the WIA programme is organized in such a manner that extension services in every state in Nigeria have female extension workers at all levels of operation from State capital to the villages (Saito & Gadzame 1996, as cited by Odurukwe *et al.*, 2006).

This programme was established not essentially for soil cultivation but mainly to mobilize women in gender specific activities, which include post-harvest activities like processing, utilization, storage and marketing of agricultural products. According to Odurukwe *et al.* (2006), the main services of WIA continue to be organizing women into groups and assisting them start group-farms. It is through these groups that WIA extension agents transfer required technology to be adopted by the women. However, the WIA programme sets much importance on off-farm undertakings of the women and the concentration has mainly been on the transfer of home economics technology.

According to the study carried out by Odurukwe *et al.* (2006), on *the Impacts of the women-in-agriculture (WIA) extension programme on women's lives in Imo State*, positive result was recorded from the adoption of this programme by women, as these women are now able to improve in such areas as family food security and increased financial contribution to household needs. Impact in children's education has also recorded positive response. It, however, shows that the impact was more on rural women than their urban counterpart. In the same vein the study conducted by Sabo (2007) on the impact of WIA in Borno State showed a positive result.

Some factors have been identified as limiting the ability of extension service agents from extending agricultural trainings to farmers. Adesiji *et al* (2013) identified the following constraints in the study of Southwest Nigeria:

i. poor state of road infrastructure;
ii. the preference of male extension workers to work with male farmers;
iii. non-availability of suitable means of transportation; and
iv. irregular supplies of extension materials.

The foregoing constraints of extension workers impact more on rural women farmers. They therefore serve as a call for necessary action as extension services are to be extended to rural women farmers adequately. There is need to rehabilitate the physical infrastructure such as roads; recruit and train more women extension service providers; make suitable transportation means available; and ensure regular supply of extension materials to extension agents by the authorities responsible for that function.

2.1.6. Access of rural women farmers to credit facilities for food crop production

Research has shown that credit facilities empower women in taking a greater role in household decision making, having greater social networks, having greater access to financial and economic resources, more bargaining power vis-à-vis their husbands and having greater freedom of mobility (Swain & Wallentin, 2008). However, women continue to experience difficulties in their effort to access such credit facilities. This is particularly the case for rural women who are highly illiterate and mainly dependent on their husbands for agricultural inputs.

A lot of women were known to be participating in the programmes of several governmental and Non-Governmental Organizations geared towards economic empowerment through farming and food security across the continent of Africa and even beyond (FAO, 2012). In Nigeria, Government and non-governmental organizations interventions, for instance, in the cassava subsector have instituted numerous measures that support the production, processing and marketing of cassava, as far back as to the 1970s. However, in recent times, some of the government programmes such as the National Accelerated Food Production Programme (NAFPP), Operation Feed the Nation (OFN), Better Life Programme (BLP) and Family Support Programme (FSP) have faded out for several reasons including lack of funding and policy reversal (Sabo, 2007).

Some of the vigorous agencies now in existence include the Agricultural Development Projects (ADPs), National Agricultural Research Systems (NARS), the International Institute of Tropical Agriculture (IITA) and other international agricultural research centres and large-scale planting material multiplication and distribution facilitated by the IFAD-assisted Cassava Multiplication Programme (CMP) and activities of oil companies

and church organizations. These institutions have made little or no impact in the agricultural activities of rural women in many parts of the country.

In order to surmount the challenges in the foregoing Establishments, microfinance banks have been instituted to provide easy avenues for poor persons to access credit. However, the bureaucratic characteristics embedded in these institutions, high illiteracy level of the women, and cultural factors such as lack of autonomy, decision-making power, and participation in household and societal decision-making have defeated its purpose in the lives of rural women (Okojie *et al.*, 2009). In most cases, collateral is often required from these women usually in the form of land which they also lack access to and so their inability to provide such denies them access to such credit facilities. This in turn decreases their ability to produce sufficient quantity of food for consumption and sale. Such demand for collateral is stimulated by the perceived short life cycle of women-run businesses, which do not often exceed a period of four years (Mutalima, 2008). On the other hand, where such collateral are provided through their husbands, the consequence is that their husbands in turn make the decision on how the fund is to be disbursed. This further ties the woman to the apron of her husband which eventually makes this fund to have no meaningful impact on her agricultural production and make loan repayment difficult (Murray & Boros, 2002).

Furthermore, where such funds can be obtained in a group, such as Cooperatives Societies or Self Help Group (SHG), these women are often denied attendance to those meetings by their husbands as they are perceived to be attending meetings where the overthrow of the man as the head of the family is to be discussed. Nonetheless, such groups have been found to be the most profitable avenues through which the women's lives can be improved by microfinance institutions. In a study conducted in India on the impact of microfinance institutions on women's empowerment, it was discovered that there was significant empowerment of the SHG members, whereas no significant change was observed on average on the lives of those not belonging to any group (Swain & Wallentin, 2008).

According to Mutalima (2008), there is a general consensus among microfinance institutions that gender dimensions are vital for designing and implementing effective microfinance strategies for improving livelihood in a progressive manner. However, some

of these institutions have not successfully integrated gender issues in their practical operations. The point must be emphasized that women's practical needs are closely connected to the socially defined gender roles, responsibilities, and social structures, which eventually create tension between women's everyday needs at present and supporting long-term strategic transformations. As such, by helping women meet their practical needs and increase their efficiency in their traditional roles, microfinance can assist women to gain respect and achieve more in their socially defined roles, in this case, agricultural production (Swain & Wallentin, 2008).

Iganiga (2008) asserts that going by the current CBN regulation, microfinance institutions now include: universal banks, community microfinance banks (being an offshoot community banks), public sector poverty alleviation agencies, NGO microfinance banks, special microfinance schemes, and other donor agencies. These are to achieve the aims of enabling the poor to alleviate poverty and attaining the Millennium Development Goals.

According to Okojie *et al.* (2009), commercial and development finance institutions are saddled with the responsibility of providing credit to the microfinance institutions (MFIs). Nonetheless, it is clear that rates of interest, inequitable distribution of wealth and income, and difficulty in reaching out to the poor constitute challenges to the operations of MFIs. In a study of Ozalla community women farmers in Edo State, Nigeria, by Iruonagbe (2010d), the result showed that the presence of Agricultural Development Programme (ADP) specifically has no positive effect on the farming activities of the women. The author of that study asserted that majority of the respondents (99.6 per cent) indicated that they had not received any form of loan or credit facility for farming. They revealed further that the Agricultural Development Programme that was supposed to perform that responsibility was very skeletal in activities and hardly available for small rural farmers.

From the study conducted by Omorodion (2007) among Esan women who were members of two micro credit groups located in Ekpoma and Ubiaja, spouses' control over their income was reported as a major hindrance to their empowerment through the micro credit groups. Other limiting factors she highlighted are: long distance between their residence and the location of the financial institutions and the use of force and threat of persecution by the government and financial institutions, which hindered their regular loan repayment

abilities. According to Anyanwu (2004), Central Bank of Nigeria study (2001) of MFIs operating in Nigeria identified the following as their objectives:

- to improve the socio-economic conditions of women, especially in rural areas, through the provision of loan assistance, skills acquisition, reproductive health care services, adult literacy, and girls' education;
- to build community capacities for wealth creation among enterprising young people and to promote sustainable livelihoods by strengthening rural responsive banking methodology; and
- to eradicate poverty through the provision of microfinance and skill acquisition development for income generation.

It was discovered from the CBN study that most of the formal Microfinance institutions had just commenced operations and that many of them were established after 1981. The bulk of beneficiaries were women, especially as most of the microfinance institutions started as non-governmental organizations (NGOs) that had the promotion of female welfare as a major basis for their establishment. Over 90 per cent of clients in the sample were women. The following reasons are presented to have engendered this approach:

- Women are marginalized with respect to economic opportunities and so need a separate promotional agenda.
- MFIs believe that women perform better in managing meager resources and promoting micro-enterprises.
- Ego problems of men make it difficult for them to solicit for small sums of money.
- Cultural practices are present, which prevent men from engaging in certain businesses, for example, petty trading.

More information breakdown is provided in Figure 2.1.

70 per cent of adults (64 million) do not have bank accounts.

21 per cent of adults (18 million) have bank accounts.

Men have better access to finance, while only 15 per cent of women currently have bank accounts.

71 per cent of salaried workers versus 15 per cent of farm employees have bank accounts.

86 per cent of rural adults do not have bank accounts.

Nigeria has the second highest percentage of people who are financially excluded in Africa – 24 per cent have access to formal banks, 2 per cent have access to other formal institutions, 24 per cent have access to informal institutions only, while 53 per cent are financially excluded.

Source: FinScope Nigeria, 2008 cited in Okojie *et al.*, 2009.

Figure 2.1: Profile of banking in Nigeria

2.2. Theoretical framework

This study is anchored on two theories. The first is the Gender and development theory, which calls for a balanced dimension to empowerment by explaining that the women's concerns can best be addressed by empowering both male and female through equal access to resources. The second theory, structural-functionalism, demonstrates that empowerment of both male and female can only be achieved if the different institutions in the society perform their functions. It is believed that these theories can provide a firm basis upon which the reviews and findings of this research can be discussed and appropriate recommendations made.

2.2.1. Gender and Development theory

Gender And Development (GAD) theory is an offshoot of the liberal feminist theory (Aina, 2012). According to Lengermann & Niebrugge (2003), Liberal feminism believes that:

1. all human beings have certain essential features: capacities for reason, moral agency, and self-actualization;
2. the exercise of these capacities can be secured through legal recognition of universal rights;
3. the inequalities between men and women assigned by sex are social constructions having no basis in nature; and
4. social change for equality can be produced by an organized appeal to a reasonable public and the use of the state.

This theory is an aspect of the collective term 'Feminism'. Feminism represents a shared term for systems of belief and theories that pay special attention to women's rights and women's position in culture and society. Its origin is traceable to the women's rights movement instituted in the late 18th century. Having increased in number across many countries, these movements still agitate for complete social, economic and political equality for women and men. The position of feminists is that women have unequal position in society with men. They also operate from the perspective that the structure of society benefits men economically, politically, and socially to the detriment of women (Lengermann & Niebrugge, 2003).

Feminism has undergone several alterations often grouped under two waves. This can be traced to the 1800 and lasted till about 1930s. The era was marked with campaigns for

equal rights between men and women. These activities were anchored on the ideas of one of the founding members of feminism in England, Mary Wollstonecraft, who wrote one of the first great articles of feminism, *A Vindication of the Rights of Women,* in 1792. This demand for equal rights for women and men created a great influence in the thinking of many scholars, including males, such as the philosopher, John Stuart Mill. In expressing his support for feminism, Mill wrote an essay titled *The Subjection of Woman* in 1869. He was determined to alter the law and public perceptions in order to emancipate them from perceived societal slavery.

The second wave of feminism began in the late 1960s. The peculiarity of this epoch in feminist activities is the use of various theories in advocating for equality between men and women in society (Barriteau, 2000). Within these theories, marked geographic and historic variations in the nature of feminism are noticeable. In this regard, four major versions of feminism can be observed, namely: radical, liberal, cultural, and socialist, and African Feminism has come to the fore in feminist discourse. Steady (1981) developed African Feminism for African feminists in recognition of the peculiarity of the African context.

The liberal feminist approach which has become a prominent approach to promoting women empowerment has been criticized as actually removing 'power' from the word empowerment (Batliwala, 2007a, b & c). This perspective represents, according to Cornwall & Anyidoho (2010:145), "*a tale of how a once-radical concept was stolen by the priests of neoliberalism only to be foisted onto women in the global south as their putative salvation.*"

GAD focuses on the implications of power in gender relations (Aina, 1998). The theory helps in advancing their basic idea of equality in society, which is traceable to the second wave of the feminist movement of the 1960s. The origin of this approach can be traced to the 1970s academic criticism in the UK concerning the concept of gender and gender relations (Young, 2002). The proponents of this approach sought to provide an explanation on how development reshapes the power relations between gender (the socially acquired ideas of masculinity and femininity) and gender relations (the socially constructed pattern of relations between men and women). They further distinguished between 'practical' gender needs (efforts that will better the lots of women within their

existing roles), and 'strategic' gender needs (efforts at improving women's ability to take on new roles and to empower them) (Moser, 1993).

The transition of GAD in Nigeria is traced to the origin of Women IN Development (WID) and Women And Development (WAD) framework in the 1970s (Aina, 2012). The focus of these approaches was poverty and meeting of basic needs of women. WID policies were aimed at poverty alleviation with emphasis on women. However, little success was recorded by this framework as indicated by the increasing feminization of poverty. Women In Development (WID) approach was criticized as treating women as a homogenous set (Momsen, 2004).

According to Aina (1998), the Gender and Development theory recently emerged to correct the inadequacies of Women In Development (WID). Levy (1996) stated the basic characteristics of GAD as follows:

1. a focus on gender relations as an analytical category (the central notion being a need to recognize differences in women and men's roles, responsibilities, and access to, and control over resources);

2. that the organizational structure for implementing GAD is "a combination of separate structures and the creation of gender competences among staff of existing structures";

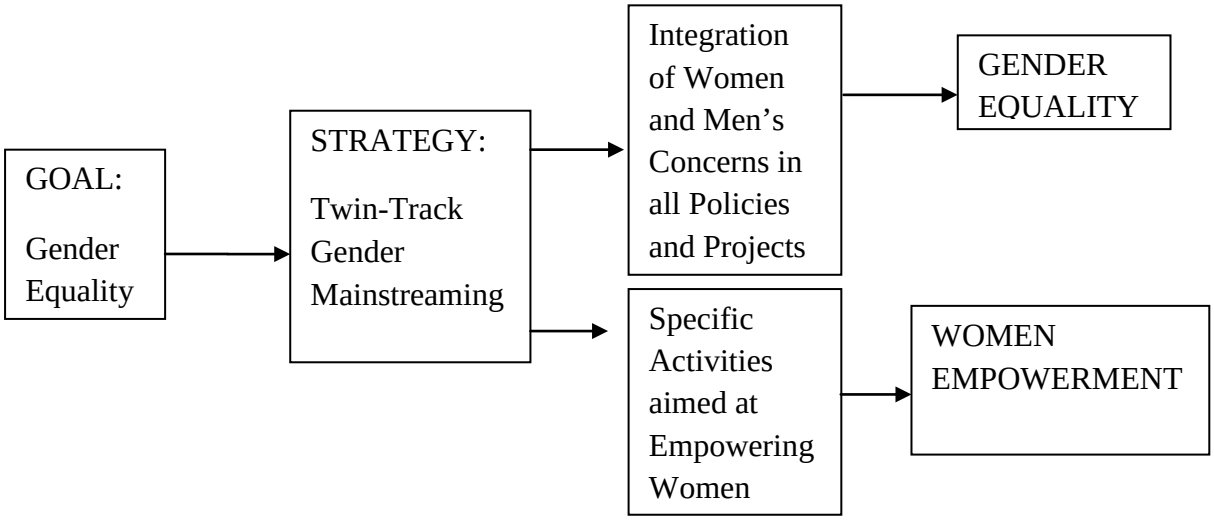
3. the mandate of GAD is to integrate gender perspectives into the regular practice of development agencies and Ministries, unlike WID which focused only on women; and

4. GAD makes a 'strategic choice' between women specific interventions or integration (in some cases, women or men-specific gender integration into mainstream sector specific interventions may be appropriate).

GAD sees gender equality not just as a matter of social equity, but as a cost to the development process. It aims at closing the gender gap for sustainable national development. It is set to accomplish this in two ways: Women empowerment and gender equality goals. GAD incorporates such words as gender mainstreaming and women empowerment in its policy framework (Aina, 2012). This is from the background that

women are agents of change, taking cognizance of the possible influence of their differences of class, age, race or ethnicity, marital status, religion on the product of development.

Gender mainstreaming is regarded as a twin-track policy strategy as indicated in Figure 2.2 according to Aina (2012).



Source: Aina (2012)

Figure 2.2: Twin-Track policy strategy for gender mainstreaming

The empowerment approach has become a common approach in recent times in advancing the course of women, especially in Nigeria. This approach is one that is known to involve participatory strategies to development and relates to working with women at the community level by building organizational skills. According to Parpart, Rai, & Staudt (2002), empowerment was regarded as a tool for the weak, best wielded through grassroots and participatory activities. Empowerment stands for different things. Rowlands (1997) defines it as a broad development process that facilitates people to gain self-reliance and self-esteem, so allowing both men and women to actively participate in development decision-making. However, there are certain parameters for its measurement. The alternative development school of thought considers empowerment as a method of social transformation and achieving gender equality (Momsen, 2004). The basic criticism against this theory lies in the ambiguity of the concept since empowerment means different things to different people; as such it is used in specific cases rather than general occasions (Rahman, 2013).

GAD approach emphasizes the need to include men in empowerment initiatives for the expected result to be achieved. Studies have shown that husband's education and occupation are significantly related to women's access to productive inputs (Iruonagbe, 2010d; Adesiji *et al.*, 2013). Men's support is essential to women's access to productive resources as women usually face cultural barriers connected to their subservient positions in the community which men help them surmount. In the case of benefitting from projects, Porter & Zovighian (2014) posit that, men have two structural advantages compared to women with regard to accessing and using project information. The first advantage is that men are relatively more connected to power structures (through which project information is disseminated), and secondly, they tend to be more literate. In Esan land, where most women and men are farmers, it therefore means that men should also be included in empowerment programmes for the women to truly experience the empowerment initiatives targeted at them.

The peculiarity of the African context that is relevant to this study is that of patriarchy which has continued to place women in a secondary position in society, thereby ignoring their contributions to societal development, the high volume notwithstanding. Moyo (2008) put this in context by his assertion that patriarchy is partly a colonial heritage, which, for instance, is not a similar experience for the British woman. This theory will

help to highlight the prevailing patriarchy in Esan West Local Government Area of Edo State, which continues to subordinate women despite their central role in development. This theory provides an understanding to this study by helping to situate the condition in Esan West Local Government Area, where women are expected to be seen only and not to be heard. Women are regarded as properties and so not worthy of inheritance. Most Esan women only have access to land through their husbands and upon the demise of their husbands such lands are withdrawn from them.

With respect to education, girl child education in Esan is often given less priority than that of the male child, as her education is considered to be of less importance to that of the male child. Men are often selected for assistance by the government and international bodies with the assumption that such assistance will trickle down positively on the households of the men but this has not often been the case. The land ownership pattern in Esan land is often executed on a gender basis, which usually excludes the woman. As such, though there are no legal restrictions to women's access to land tenure, they hardly have titles to land due to the dictates of the customs and norms of the communities. The customary law that enforces patriarchal inheritance practices among the Esan people promotes male dominated land ownership.

Access to land by women in Esan is often through her husband. A married woman could have access to the husband's land or may be involved in joint farming with her husband depending on the number of wives the husband has. Where the man has more than one wife, the woman's access is often determined by her position among the wives. The first wife may be given a bigger size of farmland depending on her number of children, age of the children and the sex of the children. The case of a widow is often more critical as she is usually at the mercy of her in-laws in accessing farmland. The theory demonstrates that empowerment of women will involve inheritance rights and the power for decision making. This will culminate in direct access and ownership of agricultural productive output for women farmers, which will ultimately increase their capacity to contribute to food security.

2.2.2. Structural-Functionalist theory

The origin of the structural-functionalist theory is traceable to the early years of the twentieth century in America (Radcliffe-Brown, 1949; Parsons 1951; Smelser, 1990;

Kalu, 2011). It was initially popular as functionalism until the late twentieth century when its application began to wane (Morrow, 1978; Turner, 2014). Functionalism, which is a macro theory, is anchored on the premise that order in a social system is sustained if the various parts that make up the society perform their functions (Chilcott, 1998; CliffsNotes, 2014).

Functionalists assert that each organ of the body connects with other parts to construct the whole society. Hence, it is not an individual part working in isolation of other parts (Skok, 1995; Trenz, 2004). They hold strongly to the position that what is generated by the combination of the whole is greater than the sum total of their individual parts (Demerath III, 1966; Blot, 1998). Structuralism helped to articulate the social constituents of the organs that make up the society (Habte-Selassie, 1975). The structural-functionalist theory is an extension of the ideas of functionalist theorists. Functionalists assert that each part of a social system has a function to perform towards the attainment of equilibrium in that society. The proponents of functionalism adopt an organismic analogy in explaining the make-up of a society. For them, societies are analogous to living organisms such as the human being. There is an interconnection of each part of the human body to every other part for the overall functioning of the body (Parsons 1951; Groth, 1970; Smelser, 1990).

Functionalism was promoted by the French sociologist, Emile Durkheim (1858-1917), the English anthropologist, A. R. Radcliffe-Brown (1881-1955) and the Polish anthropologist, Bronislaw Malinowski (1884-1942). While Durkheim and Radcliffe-Brown were associated with the branch known as structural-functionalism, Malinowski was an acclaimed functionalist; he was concerned with bio-cultural (psychological) functionalism. His focus on human physical and psychological needs led him to propose seven universal human needs, which are nutrition, safety, relaxation, reproduction, growth, movement and bodily comfort. Consequently, he proceeded to study cultures, such as the Trobrianders during the First World War, to determine how they function to meet these seven needs. Radcliffe-Brown, on the other hand, emphasized the functions of social structure rather than biological needs, stating that a society is a system of relationships.

Although, Radcliffe-Brown and Malinowski had some similarities in their ideologies, which include the fact that they employed an organismic analogy as their major analytical model; denied the value of speculative historical reconstruction; conceived of cultures as wholes; and employed the term function in considering the social effect of customs and institutions, they disagreed sharply (Harris, 1968). Their point of divergence is observable in their definition of functionalism.

According to Radcliffe-Brown (1949: 320-321), Malinowski defined functionalism as "the theory or doctrine that every feature of culture of any people past or present is to be explained by reference to seven biological needs of individual human beings." In opposition, Radcliffe-Brown rejected this notion "as useless and worse," and said "as a consistent opponent of Malinowski's functionalism, I may be called an anti-functionalist" (Radcliffe-Brown, 1949: 320-321). Radcliffe-Brown (1952:178) supported Durkheim's definition of "function" as "the first systematic formulation of the concept applying to the strictly scientific study of society." He, however, rejected definitions of function (such as the definition proposed by Malinowski) that did not relate function to "social structure." This combination gave rise to the label "structural-functional." The only agreeable definition of function for Radcliffe-Brown was the "contribution" an institution makes to the maintenance of social structure. "This theory of society in terms of structure and process, interconnected by function has nothing in common with the theory of culture as derived from individual biological needs" (Radcliffe-Brown, 1949: 322; Sanday, 1979).

This debate was pointedly addressed by Radcliffe-Brown (1949: 322), in the following quote, where he referred to himself as an “anti-functionalist”:

> *Malinowski has explained that he is the inventor of functionalism, to which he gave its name. His definition of it is clear; it is the theory or doctrine that every feature of culture of any people past or present is to be explained by reference to seven biological needs of individual human beings. I cannot speak for the other writers to whom the label functionalist is applied by the authors, though I very much doubt if Redfield or Linton accept this doctrine. As for myself I reject it entirely, regarding it as useless and worse. As a consistent opponent of Malinowski's functionalism I may be called an anti-functionalist.*

Functionalism and structural functionalism have been criticized on its inappropriateness for multi -disciplinary studies such as history. One of such criticisms was advanced by Tonkin (1986):

> *To many historians, the functionalist model of society has had obvious defects. Structural functionalism is a good model for the holistic character of a society, but it does not illuminate those relationships across societies that are crucial for historians - of trade, diplomacy or conquest; it is not a model of social action, but only of the structure of social action. Such a model of systems can only accommodate subjects in their consensual aspects, so that agency must be seen as a property of certain roles.*

In addition, criticisms against functionalism are centered on its neglect of the negative functions of events and the theory's adverse disposition to active social change. Consequently, this led some to interpret functionalism as being opposed to the study of history altogether (Harris, 1968).

For a structural-functionalist like Talcott Parsons (1902 -1979), who was a dominant figure in American sociology from the mid-1940's to the mid-1970's, the organs that constitute a social system are referred to as social institutions (Bell, 1979; Kronemeyer, 2005). Talcott Parsons (1902-1979), who was highly influenced by the ideas of Durkheim, Weber and Pareto, believed in the functional theory of stratification, which is centered on the ideology that hierarchical class systems and orders were essential for a society to function. This view was traceable to the concepts coined by Weber as ideal types. The concepts were used by Weber to explain that there are a set of values which are generated and advanced by a society through social interaction. Situating it within the capitalist system, Weber observed that these sets of values are lands, income, prestige, skill and opportunities. His influence from Pareto (1870) was connected with the fact that Pareto was the first to attempt to establish a correlation between equilibrium and solid bodies as evidenced in his Ph.D thesis titled "The fundamental principles of Equilibrium in solid bodies: An Essay on Mechanical Equilibrium" (Kingsbury & Scanzoni, 1993).

Parsons (1951) observed that individuals are expected to act in such ways as to fulfill the functional prerequisites of the social systems. This is expedient because people are dependent on each other's performances, simple withdrawal from fulfillment of expectations may be a highly aggressive act, and may, in fact, injure the other severely. He proceeded to describe four functional imperatives of a social system, often referred to as AGIP. According to him, a society can only experience social order when each of these institutions performs its roles. These are namely; **Adaptation:** The economic institution is responsible for this function by supporting the people adjust to the environment through

production and distribution. **Goal attainment:** This function is performed by the political institution by ensuring that a roadmap of advancement is set and effectively communicated to the people for collective actions.

Integration: Parsons acknowledged the fact that there will always be conflict of interest among the institutions and so he suggested the establishment of an institution to perform the intermediary role between the various institutions in order to ensure balance of functions. The institution performs a unitary function by fostering harmony among the institutions through resolution of conflicts. The institution responsible for this function is the legal institution**. Pattern maintenance:** This function is performed by fiduciary institutions such as the educational institution, the family and the religious institutions. They are to ensure that patterns established for the society are transferred to the young ones through socialization, both formal and informal**.** Although Parsons' theory of society has been described by Perdue (1986) as *"plagued by an absence of clarity"* and work which *"abounds with ambiguities in both semantics and syntax",* the import of his sociological ideologies continue to provide explanations to social occurrences in developing countries (Kalu, 2011).

In conclusion, the Structural-functionalist theory explains the consequences of role performance or failure of institutions to perform their roles on the subject who is to benefit from it. Structures refer to the arrangement of roles by which a social system is constituted (Mclntyre, 1966). The social system is the bedrock on which functionalists analyze role arrangements (Bell & Vogel, 1960). This theory is relevant in this study as it helps to explain the importance of the institutions related to the proper functioning of rural areas. The study location is a rural area and if the institutions perform their roles then rural women will be able to access agricultural inputs and therefore, be able to boost the quantity of their food production. This theory addresses the impact of social structures on the empowerment of women farmers. The structures of interest in this study include the multilateral bodies such as the World Bank, the United Nations and the African Union; the Nigerian government at the three levels – Federal, State and the Local; and the family. The willingness of these structures will culminate in rural women empowerment through provision of the required assistance and infrastructure.

Assistance from family members such as children, husband and other relatives can alleviate the drudgery of rural women farmers in Esan land. Such assistance could include more access to farmland, farmland clearing, weeding, transportation of food crops, and processing of food produce. Ogunnowo & Oderinde (2012) affirm that infrastructure is fundamental for effective transformation of rural communities in Nigeria. Infrastructure can be interpreted from different perspectives, but what is central about its definition is that it embodies the basic services and structures required for the adequate function of productive activities in a setting (Ogunnowo & Oderinde, 2012). According to Khan (1979), rural facilities can be classified into three categories:

i. physical infrastructure such as roads, water, rural electrification, storage and processing facilities;
ii. social infrastructure such as health and educational facilities, community centres, and security services; and
iii. institutional infrastructure such as credit and other financial institutions

2.3. Conceptual model

The conceptual model presented in Figure 2.3 specifies the indicators for independent, dependent and the intervening variables. The flow of relationships between the variables that defines empowerment of rural women farmers and food production is clearly presented.

From the independent variables, the specification for the conceptual schema originates from the assumption that the personal attributes of rural women farmers determine their access, control and ownership of agricultural productive inputs. Furthermore, the cultural setting that prevails in the community can determine the level of empowerment of rural women farmers. In the same view, the prevailing laws in the community influence access, control and ownership of productive resources by rural women farmers. On the other hand, if interventions are made by institutions in favour of gender equality and women empowerment agenda especially through policies, limiting factors to the empowerment of rural women farmers can be tackled.

A more elaborate description of the conceptual variables is presented according to the various analytical categories.

Independent variables:

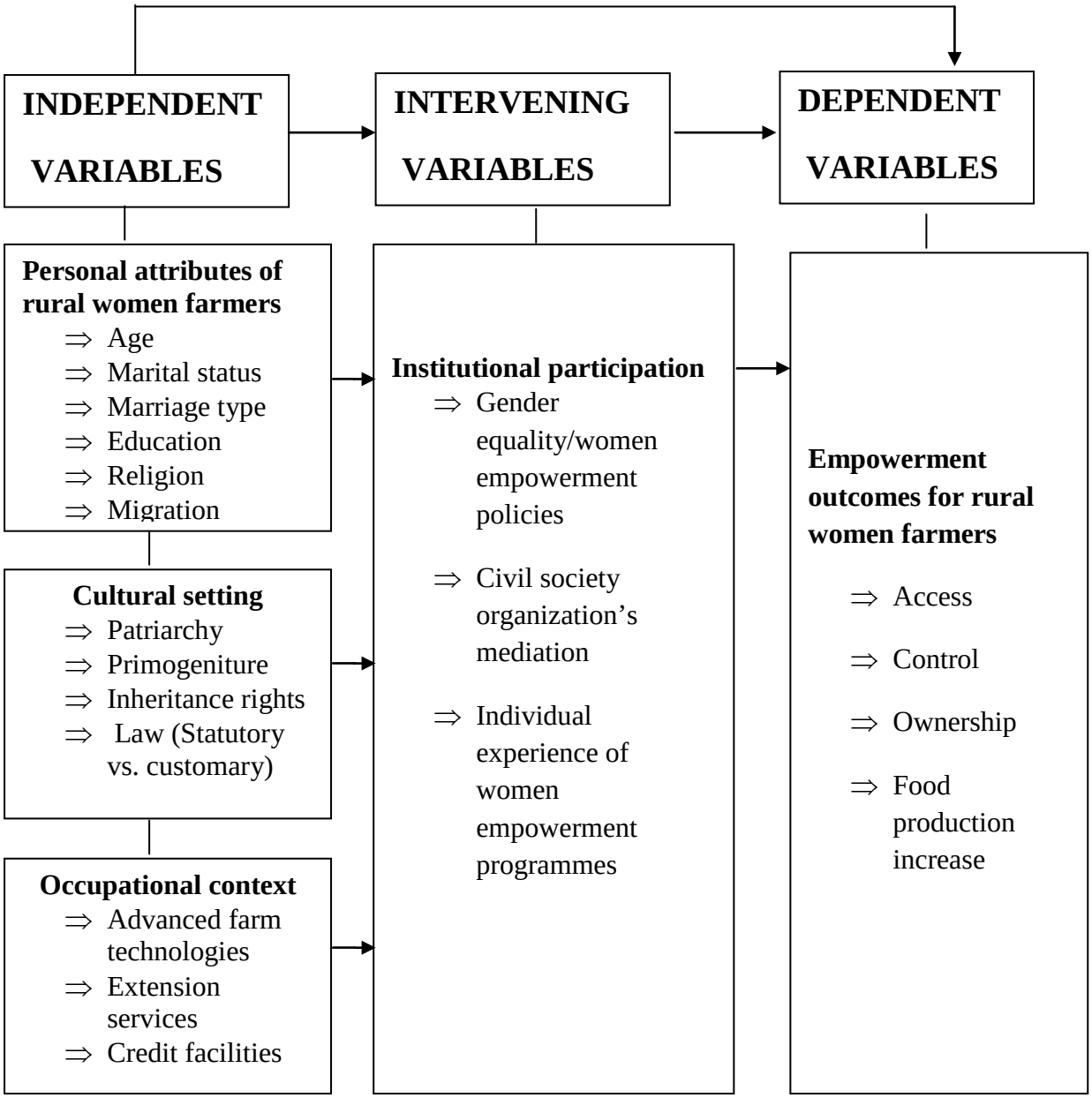
The independent variables are classified into three:

(a) Personal attributes (b) the cultural setting (c) occupational environment. The indicators are further explained as follows:

A. Personal attributes of the rural women farmers

This category consists of five indicators:

i. Age: This concept is used in this study to imply the actual number of years the individual woman farmer has lived as at the last birthday. Age is a critical determinant of access and control of resources. This will help to determine their socio-economic status. It is expected that there will be a difference in access and control of resources on the basis of age. Middle aged women are more likely to have access and control of agricultural resources in the study area.



Source: Researcher

Figure 2.3: The Conceptual Model for the Study

ii. Marital status: This indicator, as used in this study, refers to the category the woman farmer belongs in terms of whether she is single, married, divorced, separated, or widowed. Each marital status determines access, control and ownership of agricultural productive resources. The study, therefore, expects variations in access, control and ownership of agricultural resources as a result of differences in marital status.

iii. Marriage type: Marriage type in this study connotes the nature of family the woman farmer lives in by virtue of her marriage. The matter of interest here is whether or not the woman farmer is the only wife of her husband or not. Chances are that access, control and ownership of agricultural inputs will be limited where the woman's husband has more than one wife.

iv. Level of education: Education constitutes an active determinant of individuals' chances of making better choices. It is assumed in this study that the level of education of the women farmers will differ. It is also expected that the women's level of education will be generally low. Consequently, the variation in the level of education among the women farmers is expected to generate differences in access to productive inputs.

v. Religion: Religion in this study implies the belief system adhered to by the women farmers. The categories specified in this study include Christianity, Islam and African traditional religion. Variations are expected based on the individual religion of the women farmers.

vi. Migration: In this study, migration, which is the movement of people to a another location other than the location of origin on a semi-permanent or permanent basis, is considered as a potential variable that could determine women's access to inputs. It is expected that women who migrated into those communities will not have access to agricultural inputs compared with the women of who are indigenes of the communities.

B. The cultural setting

The Prevailing cultural practices in the community of rural women farmers are considered in this study as predictors of empowerment. Culture dictates the attitudes

and behaviour of a people in a society as it is the totality of the way of life of a people. This study presents four indicators of culture that can determine the empowerment of rural women farmers.

i. Patriarchy: Patriarchy refers to male-supremacy. Where male supremacy is the order of the day, women farmers face a great challenge in accessing agricultural input.
ii. Primogeniture: This refers to the practice of hand over of power to the son of the deceased ruler. This study expects that the rule of primogeniture will limit women's empowerment as no woman will be granted that privilege. This will further affect inheritance rights thereby removing the women's chances of inheriting properties, especially land.
iii. Statutory vs. Customary law: The type of law that prevails in a community determines women's access to land. It is expected that the customary law will prevail, which will highly limit women empowerment as it operates on the local traditions of the community.

C. Occupational environment

The nature of environment within which a woman farmer operates is a predictor of her empowerment. An occupational environment that is furnished with agricultural productive inputs such as advanced farming technologies, extension services, microfinance facilities will be empowering for rural women farmers.

Intervening variables

Institutional participation is expected to be a prime factor that will determine empowerment of women farmers in the study area. Institutions in this study are agencies that are established to perform specific functions related to women empowerment and food production. On a national level, these include Local, State, and Federal agencies. On an international context, agencies of the United Nations and the World Bank are involved. Civil society organizations such Lift Above Poverty (LAPO) and Civil Liberty Organization (CLO) are also included. The extent to which these organizations perform their roles towards empowering rural women farmers is capable of determining the level of access and control of resources by Esan rural women farmers. Such functions can include formulation and implementation of favourable policies for rural women farmers;

public enlightenment; provision of basic amenities such as water and good roads; and ensuring the availability and accessibility of agricultural inputs such as land, farm technologies, farmers' education and credit facilities.

On the other hand, the individual exposure each woman has of institutional intermediation in empowerment of women farmers can determine the outcome on food production. For instance, if credit facilities are available in Esan West and only a few women could access them, the outcome of such access will impact on food only for those who accessed the facilities and not on every woman farmer in the area.

2.4. Gaps in reviewed literature

Research in the area of women empowerment is gaining momentum. Empirical studies are still limited in the following aspect in the literature.

1. **Women empowerment:** From available literature, studies on women empowerment have been conducted outside Nigeria, particularly in Asia (Daman, 2003**;** Malhotra *et al.,* 1995; Suguna, 2011; Swain, R. B. & Wallentin, 2008). This creates a paucity of data necessary for policy towards rural women empowerment in the Nigerian context.
2. **Rural women:** In the same vein, studies conducted on rural women in Nigeria emphasize on the impact of patriarchy and the rule of primogeniture on rural women's access and ownership of land for farming (Iruonagbe, 2009b & 2010c). However, there is limited study on the impact of infrastructure on the women's capacity to maximize the land available to them for food production.
3. **Farm technology:** There are indications that gender-sensitive advanced farm technologies are being adopted among many women farmers (Bob, 2004; Ezeh, 2013; Hafkin, & Taggart, 2001; Mgonja *et al.,* 2000; Whitehead, 1985; Yahaya, 1995; Zunguze, 2007). However, there is limited study on the availability and adoption of advanced farm technologies by rural women farmers in Nigeria.
4. **Extension services:** It is clear from the literature that African women farmers lack access to extension services (Adesiji, 2006; Adesiji *et al.,* 2013; Alabi *et al.,* 2014; Amalu, 1998; FAO, 1993; Odurukwe *et al.*, 2006; Williams, 2000). There are, however, inconsistent findings on the factors inhibiting rural women farmers from accessing agricultural extension services.
5. **Credit:** Some findings on many women empowerment studies reveal that women are gradually experiencing financial empowerment (Anyanwu, 2004; Mayoux, 2001; Mutalima, 2008; Okeke & Ikponmwosa, 2012; Okojie *et al.,* 2009; Omorodion, 2007; Pitt *et al*., 2007; Tarozzi, 2015). There is, however, limited study on the impact of such empowerment on the food production capacity of rural women farmers.

2.5. Research hypotheses

To achieve the objectives of the study, the following hypotheses were formulated:

i. The source of farmland will determine the type of crops cultivated by Esan rural women farmers;

ii. Access to advanced farming technologies will stimulate increase in food crop produced by the rural women farmers in the study area; and

iii. Access to credit facilities for farming will lead to increase in food crop produced by rural women in the study area.

CHAPTER THREE

METHODOLOGY

This chapter contains the research sampling techniques, procedure for data collection, problems encountered during fieldwork, and tools for data analysis.

3.1. Research design

Social researchers usually ask two basic types of research questions. The first is 'What is going on?' and the second is 'why is this going on?' The former type of question is known as descriptive research while the latter is referred to as explanatory research. As the name implies, descriptive research describes social phenomenon. Explanatory research, on the other hand, seeks to develop and evaluate causes of phenomenon. From this background, this research is both a descriptive and an explanatory study. This study is meant to investigate what is going on among rural women farmers in the study area. This study is set to provide an understanding on the empowerment status of rural women farmers in relation to their food production capacity. To this end, the dependent variable is identified as food production, while the independent variable is empowerment.

3.1.2 Determination of variables that constitute empowerment

It is clear that the interpretation of women empowerment and its measurement varies across different contexts. Some studies construct an index/indicator of women empowerment. However, Swain & Wallentin (2008:20) refer to this practice as "an inappropriate technique" because it could permit the use of arbitrary weights. Presently, many researchers use Item Response Theory (IRT) which involves an analysis of the whole pattern of a set of binary indicators that represent a woman's independence. These include taking a greater role in household decision making, having more access to financial and economic resources, acquiring more awareness trainings and workshops, belonging to greater social networks and possessing greater freedom of mobility. The IRT is considered an appropriate platform for the interpretation and measurement for this research work.

The relationship between empowerment and food production of the rural women in the study area was determined in two ways. The first was by identifying the women's main

source of land and then the crop they mostly cultivate. This was expected to help to investigate if their source of farmland determines the type of crops they produce. Secondly, the relationship was determined by identifying differences, if any, in quantity of food produced before and after access to agricultural productive inputs such as farming technologies, extension services and credit for farming. As such, the empowerment of rural women is expected to lead to an increase in food production. The variables developed to constitute empowerment are determined by the adoption of the Item Response Theory (IRT), which has become a widespread method of determining women empowerment among scholars (Swain & Wallentin, 2008). This theory involves an analysis of a set of binary indicators. To this end, empowerment in this study is determined by the extent to which the following indicators are present among the rural women farmers in the study area:

1. access and ownership of land;
2. availability and access to modern farming technologies;
3. availability and access to farmers' education from extension agents; and
4. availability and access to credit facilities for farming.

3.2. Study population

The 2006 population census revealed that Nigeria had a population of 140,003,542. It was further disaggregated as consisting of 71,709,859 males and 68,293,683 females. The Census showed further that Edo State had a population of 3,218,332 million people consisting 1,640,461 males and 1,577,871 females. Specifically, Esan West Local Government was known to be made up of 125,842 people with 63,785 males and 62,057 females across the twelve units and the Headquarter, Ekpoma. The breakdown of the population of each unit of the Local Government Area could not be accessed as they were before the tribunal being contested for inaccuracy of result.

3.3. Sample size

Data for this study were derived from a sample size of four hundred and fifty seven (457) active women farmers in Esan West Local Governemnt Area of Edo State Nigeria. The sample size is considered adequate to help achieve confident generalizations about the study area. Due to the inability to access the population size of each unit of the study area,

the standard formula for sample size determination was adopted to arrive at an adequate sample size.

According to Babalola (1998), the standard formula for calculating the minimum sample size when the universe contains 10,000 objects or more is as presented in Figure 3.1.

Where n: minimum sample size,
z: The normal deviate corresponding to the desired confidence level = 1.96,
p: The proportion of people in the study population thought to have the key character being measured = 0.7,
q: The complement of p, q = 1-p = 0.3
d: Degree of accuracy desired = 0.05
Therefore;
n = 1.962×0.7×0.3/0.052 = 3.8416×0.21/0.0025 = 0.806736/0.0025 = 322.69
n ≈ 323

Since the formula only stated the minimum sample size to be considered suitable for any sample frame that has more than 10,000 objects thereby arriving at 323 sample size, there was a need to increase the sample size of this study to 457 in order to minimize any sampling error. Increasing the sample size was expected to enhance the reliability of the research findings.

3.4. Sampling technique

The traditional clan was used as the basis for selecting the respondents instead of the political wards since customary laws often prevail over statutory laws in these communities. Respondents from the seven kingdoms were randomly selected from the strata created in order to ensure adequate representation of every community thereby giving each woman farmer the same opportunity to be chosen. This is in view of the fact that the streets are not planned and the houses are not systematically numbered.

Being a rural area in Nigeria, the communities were taken as a homogenous group. Consequently, after the sample size was systematically determined, the purposive sampling technique was adopted in the selection of respondents across the communities. This method has been considered suitable for community studies by many scholars (Palys, 2008; Peil, 1982; Teddlie, and Yu, 2007; Tongco, 2007). Three (3) research

$$n = \frac{z^2 pq}{d^2}$$

Figure 3.1. Formula for sample size determination

Source: Babalola (1998).

assistants, consisting of two male graduates and one female undergraduate, were employed both in the administration of the questionnaire and the interviews. They were fluent in the Esan language and abridged English language (pidgin) taken into cognizance the low level of literacy among the respondents.

Both quantitative and qualitative approaches of research were adopted. These include the use of survey method, which is quantitative, with the combination of In-depth interviews and Focus Group Discussions (FGDs), which were subject to content analysis. This presents a triangulation of methods. The survey instrument for data collection involved the use of a 53-item structured questionnaire, while interview guides were developed for the in-depth interview and FGD sessions. Questions were structured in such a manner as to achieve the aim of answering the basic questions of the study. Data were analyzed with the use of univariate (frequency distribution and simple percentages), bivariate (chi-square) and multi-variate (multiple regressions) statistical tools. Qualitative data were subject to content analysis.

3.5. Pilot study

In order to avoid ambiguity in the data collection process, a pilot study was undertaken to determine the ability of the questionnaire to elicit the required information for the research aim to be achieved. The pilot study was conducted with fifty copies of the questionnaire. After the pilot study was conducted, some adjustments were made in the questionnaire such as reducing the questions from 64 to 53 questions. Content validity was achieved in the work through the adoption of mixed methods.

3.6.0. Procedure for data collection

The period of data collection was between April and July, 2014. The mixed method of data collection also known as triangulation method was adopted in this study. It includes the survey, Focus Group Discussion (FGD), In-Depth Interview (IDI), non-participant observation and case studies.

3.6.1. Survey questionnaire

The survey was conducted with the use of a self-developed rural women farmers empowerment questionnaire (RuWFES) consisting of 53 questions (see Appendix I).

The questionnaire was purposively administered to active women farmers (women aged 20 to 69 years) in Esan West Local Government Area, which is the study area. The structured questionnaire was divided into five (5) sections. The first section contained questions relating to the socio-demographic characteristics of the respondent, such as age, marital status, religion, family size, level of education, husband's number of wives, among others. The second section consisted of questions relating to respondents' access and ownership of land. The third section contained questions about respondents' awareness, access and use of modern farming equipment such as cassava uprooter, weeding machines, palm oil extractor and so on. The fourth section focused on questions relating to the respondent's awareness, access and use of modern farming techniques such as improved seedlings, fertilizers, pesticides, among others. The fifth section contained questions related to respondent's access to credit facilities.

The questionnaire contained both closed and open-ended questions. In view of the low level of literacy, the questionnaire was administered using personal interviews method. This implies that the questions in the questionnaire were read to the respondents and the answers were recorded by the researcher or the field assistants. This helped to achieve 100 percent return on questionnaire administered. Being a rural area, known for low literacy level, the questions were designed in simple sentences so that respondents could easily give appropriate responses. The language used in communicating with the respondents was mainly their traditional dialect although where necessary, Pidgin English was adopted. Since it was mainly a face-to-face interview, 100% completion rate was recorded as 457 copies were administered and adjudged usable.

3.6.2. Focus Group Discussions (FGDs)

With the use of a self-developed discussion guide (see Appendix III), this study engaged women in a Focus Group Discussion session in six of the seven clans selected for this study. The seven clans are: Egoro, Ekpoma, Idoa, Ogwa, Ujiogba, Ukhun, and Urohi. The discussion was undertaken in their local language for appropriate responses. In all, six FGDs were conducted as none could be held in Ukhun Kingdom due to the women's absence the number of times the researcher visited them for that purpose. However, an in-depth interview held with the king and one of his chiefs helped to fill that gap.

The focus group discussions focused on the subject matter of access and ownership of productive inputs in relation to the quantity of their food produced. The aim of the FGD sessions for this study was to obtain data relating to the cultural dynamics involved in access and ownership of farming inputs such as land, machines and credit. Their access to extension services and farmers education for the rural women farmers was also pursued.

A semi-circle form of sitting position was adopted where the researcher was at the middle of the women to ensure good eye contact and equal participation of the women which ranged from 6-12 persons. A tape recorder was used to record the sessions but the use of a camera was frowned at by the women as some of them perceived it as going too far into their privacy.

3.6.3. In-Depth Interviews (IDIs)

This method of data collection was employed in this study to elicit information concerning the role of the Local government in the empowerment of rural women farmers in the area and the level of influence of some factors like culture and federal government allocation on their efforts. This was expected to bridge any gap that may have been created in the structured questionnaire. The in-depth interview was conducted with two knowledgeable persons: (a) the head of the Agricultural Department in the Local Government Headquarter; and (b) the personal assistant to the Chairman of Esan West Local Government Area, who hails from Esan and has served in the Local Government office for more than a decade. The head of the Agricultural Department provided information on the extension services available in EWLGA and how they impact on rural women farmers. On the other hand, the personal assistant to the Local Government Chairman helped to explain the efforts of government towards the empowerment of Esan rural women farmers. A self-developed in-depth interview guide was employed to elicit responses from them (see Appendix II). A recorder was used to document the interview sessions. Data obtained were transcribed, sorted, coded and analyzed.

3.6.4. Non-Participant Observation (NPO)

The non-participant observation method of data collection was one of the mixed methods adopted in this study. This was conducted as the researcher visited the International Institute for Tropical Agriculture (IITA), Ibadan and the seven clans that constitute the study area, with emphasis on the farm settlement in Ekpoma community. A brief report of

the non-participant observation conducted at the International Institute for Tropical Agriculture, Ibadan, and the farm settlement in Ekpoma, Edo State, Nigeria is included. Other observations are communicated in specific portions of the report such as the aspect on the factors inhibiting women's access to empowerment.

3.6.5. Case studies

Three case studies were conducted in this study to enhance the validity of data for this research. This study adopted the instrumental version of the case study formats out of the three enumerated by Stake (1995). It involved the act of employing the case study to gain more understanding than what is obvious to the researcher. As such, the three case studies employed in this study provided more understanding on the land ownership pattern of the women farmers.

3.7. Field experience

Several challenges were encountered during fieldwork in the study area. The major challenge encountered in the process of data collection was that of accessing the communities due to bad road network. Erosion has cut into the roads that the main means of transportation is commercial motorbikes. This had accompanying challenges like high cost of transportation and some communities seem to be caught off from the business districts. For instance, when the researcher was to visit Uke community, many of the commercial motorbike riders refused to take her. Some refused because they have never been there while others said they were not going because the road was bad, even though it is not far from the commercial centre.

There was also the challenge of insecurity which prevented the use of sophisticated materials like Ipad and tablet because of fear of robbery. Furthermore, the researcher was faced with the challenge of returning to the place of residence late at night in an attempt to coordinate the activities of the field assistants for proper recording and documentation. Finally, the researcher was faced with high financial demands for the payment of research assistants, transport fare, refreshments and other miscellaneous expenses incurred in the process of data collection. But thank God these were successfully surmounted and the goal of data collection was achieved.

In spite of the challenges encountered, the researcher received high level of acceptance from the community heads. They were pleased to know that someone cared about the well-being of their people. They displayed their elation by showering the researcher with prayers. There was also the presentation of kolanuts, which represented their goodwill for the researcher. In addition, they were enthusiastic to answer questions asked by the researcher with details. The King of Ukhun, one of the traditional clans, expressed his gratitude by showing the researcher his royal apparel, which he was not wearing at the time of interview; his royal chair and other valuables in the palace while connecting the origin of the community to the Bini Kingdom. This confirmed the position that the community is traceable to the Bini Kingdom.

3.8. Analytical techniques

Data analysis involved the use of the Statistical Package for the Social Sciences (IBM SPSS) for data entry and creation of tables. The statistical tools for the analysis involved the use of frequency distribution, crosstabulation, and Chi Square analysis to test hypotheses stated for the study and multiple regression. This was followed by the use of qualitative analysis of data obtained from In-depth Interviews and Focus Group Discussions. The process involved transcribing all the recorded information, and then subjecting them to content analysis. The responses were summarized and significant quotations were reported verbatim in order to project some central opinions where necessary.

Frequencies and percentages were used to analyze the research questions. The Statistical Package for Social Sciences (IBM SPSS version 19.0) was employed to run data analysis. Data generated from the qualitative method including FGD and IDI were analyzed using content analysis approach which is most suitable for a research of this nature (Ritchie *et.al,* 2003).

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

The purpose of this chapter is to present, analyze and discuss data generated from respondents through the administered questionnaire, In-Depth Interview (IDI), and Focus Group Discussions (FGD). The aim of the study formed the basis upon which the tables were arranged. Each hypothesis tested is followed by a summary of main findings. A three pattern format was adopted in the presentation and analysis of data namely demographic data presentation, answers to research questions and results of hypotheses testing. The chapter is concluded with discussion of research findings. Presentation of tables is done according to the five sections in the research questionnaire.

4.1 Socio-demographic profile of respondents

This section presents the socio-demographic characteristics of the sampled rural women farmers. Although numerous variables qualified to be included under the socio-demographic characteristics, only few ones that are very germane to the study were analyzed and the results are presented in Table 4.1. All the respondents were women, hence the missing of gender variable in the Table. The mean age of the respondents was 48 years indicating that they were matured adults, and so, capable of decision taking when it comes to farming and other related matters. Only 25.6% of the women were below 40 years. This is clear from the findings as 5.9 per cent belonged to the age group of 20-29 years, 19.7 per cent ages 30-39 years, 24.5 per cent for ages 40-49, 26.0%, being the highest category, for ages 50-59 years and finally 23.9 per cent for ages 60-69 years. Most of the women were between 30 and 59 years of age. This result is consistent with the finding by Iruonagbe (2010d) in the study of Ozalla women of Edo State, Nigeria.

Table 4.1: Socio-demographic profile of respondents

Selected Variables	No	%	Selected Variables	No	%
Location			**Age Group**		
Ekpoma	206	45.1	20-29 years	27	5.9
Idoa	82	17.9	30-39 years	90	19.7
Ogwa	72	15.8	40-49 years	112	24.5
Urohi	63	13.8	50-59 years	119	26.0
Egoro	16	3.5	60-69years	109	23.9
Ujiogba	15	3.3	Total	457	100.0
Ukhun	3	0.7	Mean age = 48 years		
Total	457	100.0	**Marital Status**		
Educational Attainment			Single	1	0.2
No formal Education	154	33.7	Married	290	63.5
Primary	201	44.0	Separated	13	2.8
Secondary	92	20.1	Widowed	153	33.5
Tertiary	9	2.0	Total	457	100
Postgraduate	1	0.2	**Children Alive (CA)**		
Total	457	100	0-1 Child	14	3.1
Children Ever Born (CEB)			2-3 Children	68	14.9
0-1 Child	8	1.7	4-5 Children	143	31.3
2-3 Children	55	12.0	6-7 Children	136	29.8
4-5 Children	133	29.1	8-9 children	80	17.5
6-7 Children	126	27.6	10 children and above	16	3.4
8-9 children	91	19.9	Total	457	100
10 children and above	42	9.6	Mean CA = 6 Children		
Total	457	100	**Religious Affiliation**		
Mean CEB = 6 Children			Christianity	435	95.2
			Islam	20	4.4
			Traditional religion	2	0.4
			Total	457	100

Source: Field Survey 2014

The distribution of the respondents by marital status reveals that 1 respondent was single (0.2%), 290 respondents were married (63.5%), 13 respondents (2.8%) were separated and 153 respondents (33.5%) were widowed. This means that most of the respondents were married (63.5%). In each of the selected seven communities, the percentage of respondents who were married were as follows: 81.2% in Egoro, 65.0% in Ekpoma, 46.3% in Idoa, 72.2% in Ogwa, 66.7% in Ujiogba, 66.79%, in Ukhun and 65.1% in Urohi. In all the seven communities, more than half of the respondents were married except for Idoa where the majority of the respondents were widows (53.7%), and this has a propensity to limit their access to productive resources, especially land.

Among other characteristics of the respondents is the Children Ever Born (CEB) which denotes the average number of children born to a woman of reproductive age. Data show that 1.7% of the respondents constituted the category of those who had one child for children ever born. Other categories were 12% for 2-3 children, 29.1% had 4-5 children, 27.6% had 6-7 children, 19.9% had 8-9 children while 9.6% had 10 children and above. The mean number of children ever born was 6. For Children alive, 3.1% of the respondents had between 0 to 1 child, 14.9% had 2 to 3 children, 31.3% had 4 to 5 children, 29.8% had 6-7 children, 17.5% had 8-9 children, and 3.4% had 10 children and above.

The statistics on educational attainment revealed that almost half of the respondents (44.0%) had only primary education while 20.1 per cent had attained secondary level of education. Only 10 (2.2%) out of 457 women interviewed had attained above secondary education. One third (precisely 33.7%) of the total respondents had no formal schooling. On the other hand, most of the husbands (44.1%) had secondary education. Only 15.2 per cent were found to have no formal education. Of all, 25.9 per cent had primary education. Husbands with tertiary education constituted 15.5 percent (Table 4.2). This reveals the disparities that exist between the level of education attained by both men and women.

The religious affiliation shows that most respondents were Christians. Table 4.1 shows that 435 respondents representing 95.2 per cent of the respondents were Christians. Twenty respondents (4.4%) practice Islamic religion while only 2 respondents (0.4%) were traditional worshippers. From the result, it can be deduced that almost all the

respondents in each community were Christians. In Egoro, 81.2% were Christians while in Ekpoma, Idoa, Ogwu, Ujiogba, Ukhun and Urohi, the percentage of Christians were 98.5%, 80.5%, 100.0%, 100.0%, 100.0% and 100.0% respectively. This result is a positive signal that most women in these areas will be receptive to empowerment programmes if available. This assertion is derived from the findings of Njoh and Akiwumi (2012). In assessing the impact of religion on women empowerment as a Millennium Development Goal in Africa, they found that the Christian religion correlates with each of the four development targets which constitute the components of women empowerment under the third of the Millennium Development Goals (MDGs).

Table 4.2 reveals that most of the husbands (44.1%) had secondary education. Only 15.2 per cent were found to have no formal education. Of all, 25.9% had primary education. Access to tertiary education by the men was found to be 15.5%. Husband's religion showed that most of them (90%) were Christians, 4.1% were of the Islamic religion, 3.1% were traditional worshippers while 2.8% were atheists. In considering the number of wives by respondent's husband, 59.9%, reported that their husband's had one wife. In addition, 14% mentioned two wives. Furthermore, 3.2% mentioned that their husbands had three wives, while 1.2% reported four wives and above. It must be noted though that asking wives to mention the number of wives their husbands have must be observed carefully as some men have wives outside the home which may not be known to the wife at home (Bradbury, 1973).

Furthermore, Table 4.2 shows that the main occupation of most husbands was farming. This was reported among two hundred and forty six (53.8%) women. This was followed by employment in the civil service (6.3%) and artisans were fourteen (4.9%). Others include retired (1.4%), politician (1.0%), business (0.7%), driver (0.3%), military (0.3%), and pastor (0.3%). The main crop cultivated by the husband's involved in farming was yam. With respect to the crop mostly cultivated by the husbands, pineapple cultivation was found among forty three (17.5%) of them, cassava was reported among thirteen husbands (5.3%), 11 of them (4.5%) mentioned plantain.

Table 4.2: Socio-Demographic Profile of Respondent's Husband

Selected Variables	**No**	**%**	**Selected Variables**	**No**	**%**
Husband's Education			**Number of wives**		
No formal education	44	15.2	One Wife	207	71.4
Primary	75	25.9	Two Wives	64	22
Secondary	128	44.1	Three Wives	15	5.2
Tertiary	45	15.5	Four Wives & above	4	1.4
Total	290	100	Total	290	100.0
Husband's Religion			**Husband's Occupation**		
Christianity	261	90	Farming	246	84.8
Islam	12	4.1	Civil Servant	18	6.3
Traditional worshipper	9	3.1	Artisan	14	4.9
Atheist	8	2.8	Driver	1	0.3
Total	290	100.0	Business	2	0.7
Husband's Main Crop			Pastor	1	0.3
Yam	156	63.4	Politician	3	1.0
Pineapple	43	17.5	Military	1	0.3
Cocoa	23	9.3	Retired	4	1.4
Cassava	13	5.3	Total	290	100.0
Plantain	11	4.5			
Total	246	100			

Source: Field Survey, 2014

4.1.1 Age

An understanding of the age of respondents is vital in this study as agricultural activities among rural farmers have been found to be dominated by the use of crude implements and small holder farming (Iruonagbe, 2010c; Harun, 2014). The ability of a woman to employ crude implements in farming is highly determined by age. The younger women are more likely to be physically fit enough to utilize these crude tools. Consequently if the number of women farmers who are old is higher than those who are young, then a potential decline in farming is imminent and this will culminate in low food production thereby increasing food insecurity. Harun (2014) classified farmers age into three categories namely; young (ages 15-30), middle (31-50) and old (>50). In applying this classification to the finding of this study where 49.9 per cent belong to the age group of 50 and above, it becomes clear therefore that Esan rural women farmers' age belong to the old category as demonstrated in Figure 4.1.

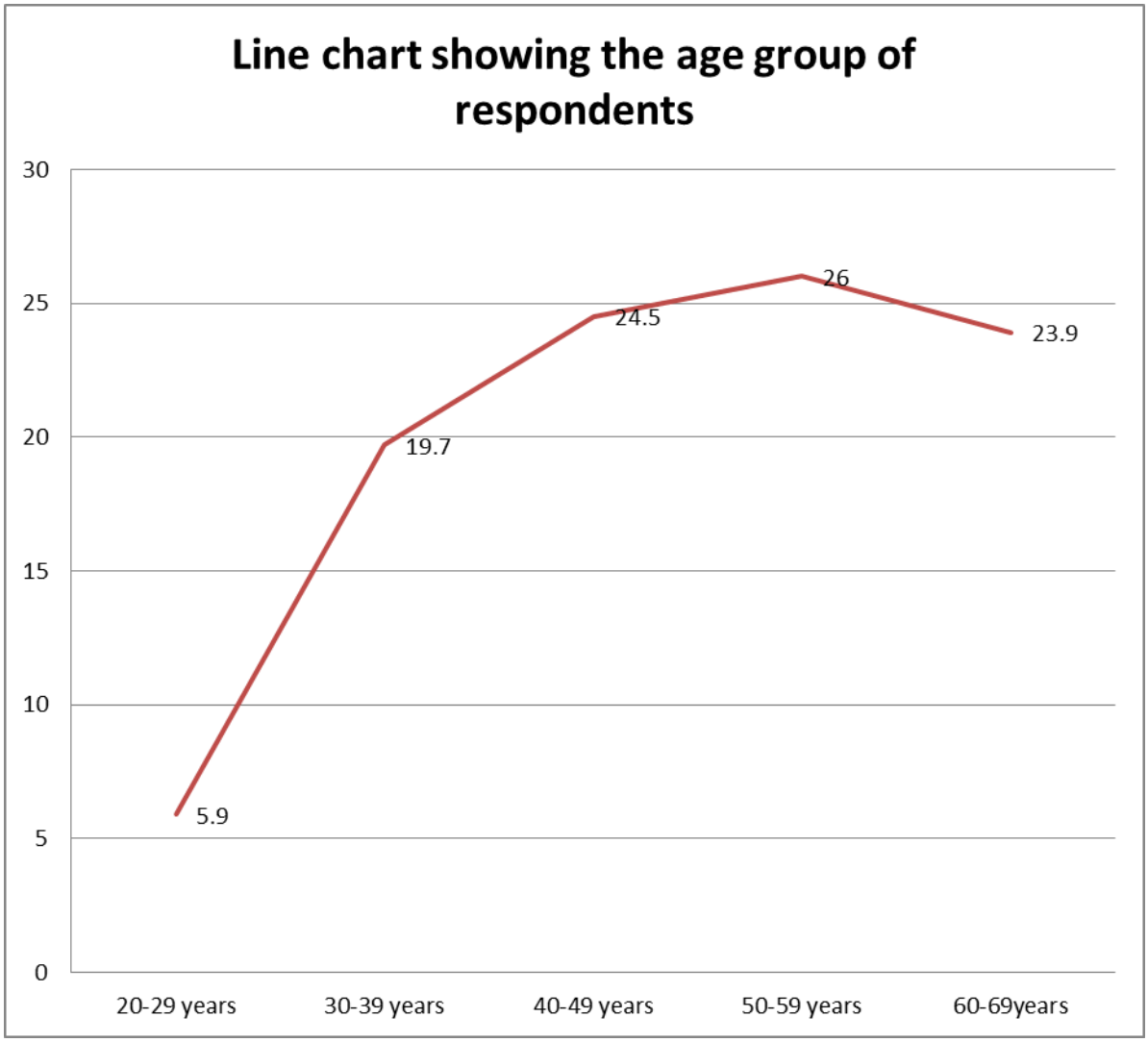


Figure 4.1: Line graph

Source: Fieldwork, 2014

The ageing dimension of farmers identified among the population of Esan women farmers is also supported with the recent data released among the farmers in The United States of America. According to the report of the U.S. Department of Agriculture, the average age of U.S. farmers has increased by nearly eight years, from 50.5 years to 58.3 years (Kurtzleben, 2014). However, this aging factor among the American population has not been reported to have induced any decline in food production because of the enormous use of modern technology in agricultural production (Sunding & Zilberman, 2001).

Respondent's marital status is important in terms of access to land for food production. Since most rural women farmers access their farmland through the male figure, usually their husbands, the presence and absence of a husband has grave implications for food production (Enwelu Morah, Dimelu, & Ezeano, 2014). A widow faces greater challenges because she has to depend on her in-laws with regard to farm land. She may also have to rely on what her children inherit depending on their age and sex (Iruonagbe, 2010d). The situation may demand that she holds land in trust for her children after her husband's death, but that does not give her ownership right, only access right (Osagie & Otoide, 2012). In addition, marital status affects access to agricultural information and projects (Porter & Zovighian, 2014). This is because many women have been found to depend on their husbands for information about project and access to same (Adesiji *et al*., 2013). The difficulties experienced by widows stem usually from their advanced age, which prevents them from re-marrying easily. Table 4.3 reveals that Esan rural women farmers who are widows fall mostly between the age group of 60 and 69 years. About 56.2% of the widows had primary education as the highest level of education as shown in Figure 4.2.

4.1.2 Marital Status

Table 4.3: Age by marital status of respondents

	Marital status of respondents				Total
	Single	Married	Separated	Widowed	
Age group					
20-29 years	1 (0.2%)	25 (5.5%)	1 (0.2%)	0 (0%)	27 (5.9%)
30-39 years	0 (0%)	76 (16.6%)	3 (0.7%)	11 (2.4%)	90 (19.7%)
40-49 years	0 (0%)	86 (18.8%)	4 (0.9%)	22 (4.8%)	112 (24.5%)
50-59 years	0 (0%)	66 (14.4%)	3 (0.7%)	50 (10.9%)	119 (26.0%)
60-69 years	0 (0%)	37 (8.1%)	2 (0.4%)	70 (15.3%)	109 (23.9%)
Total	1 (0.2%)	290 (63.5%)	13 (2.8%)	153 (33.5%)	457 (100%)

Source: Fieldwork, 2014

4.1.3. Children ever born and alive

The importance of children in rural areas is anchored on their assistance with farm work. Hence, the number of children a family has in a rural setting was a determinant of how wealthy the farmer is; the more the number the greater the wealth (Doss, 1999; Ojo, 2001). This study reveals a disparity between the number of children ever born by respondents and the number alive. Result showed there was a decline in the number of children alive compared with the number of children ever born. For instance, about 2 percent of the respondents reported to have given birth to 12 children, only 0.2 percent reported having 12 children alive. On the average, from having ten children ever born, some reported only five children alive thereby bringing together the number of children alive between four and seven children. This was traced to the poor state of health facilities accompanied with the prevalent polluted water in the communities.

Children survival ratio (children alive/children ever born): 0-1 child: 14/8 = 1.7; 2-3 children: 68/55 = 1.2; 4-5: 143/133 = 1.1; 6-7 children: 136/126 = 1.1; 8-9 children: 80/91 = 0.9; 10 children and above: 16/42 = 0.4

Reduction in the number of children aggravates farm work for the women as they have fewer hands to assist them in the farm.

4.1.4. Educational Status

Table 4.4: Respondent's level of education by husband's level of education

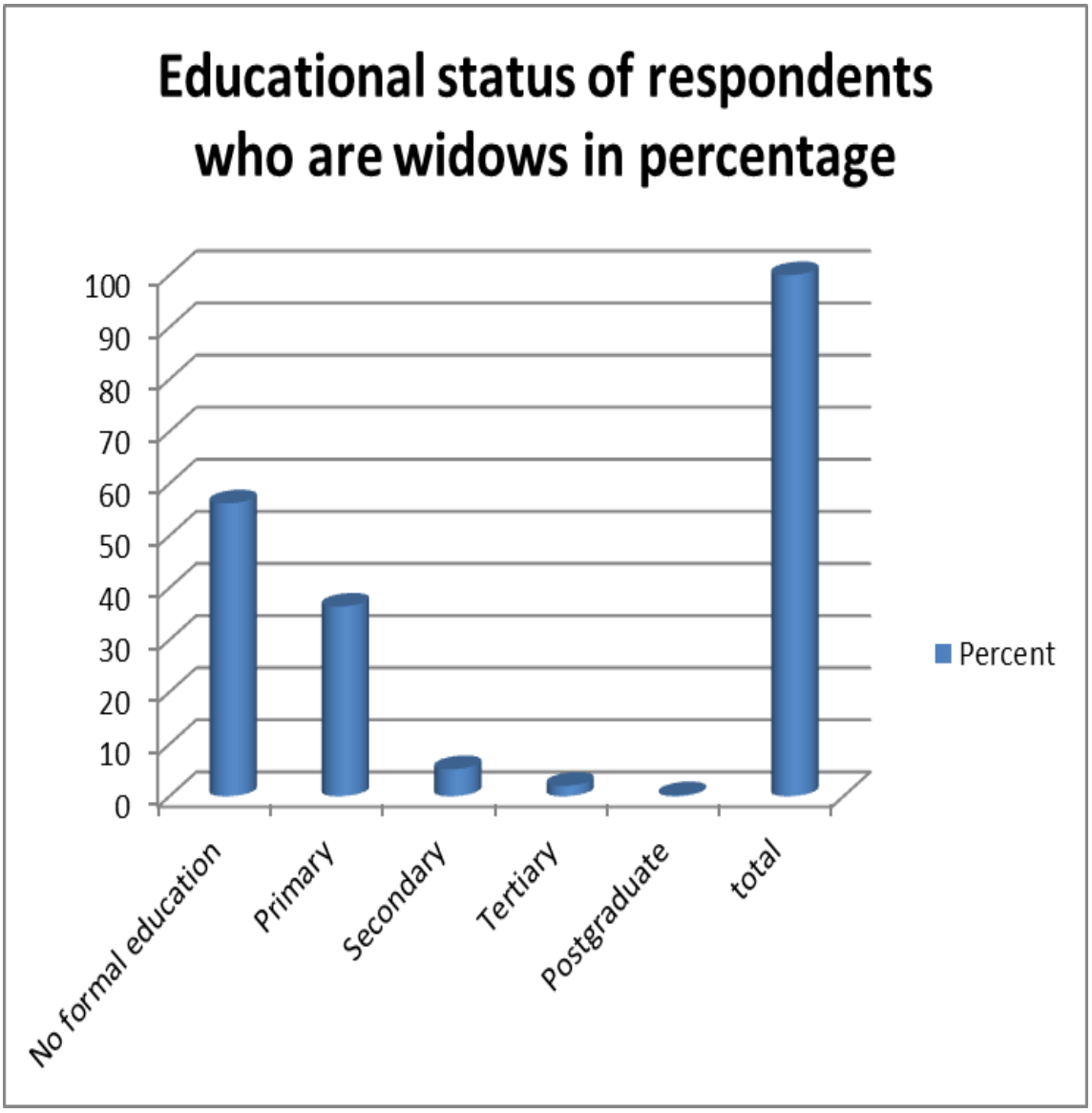
		Husband's level of education						
		No formal education	Primary	Secondary	Tertiary	Post graduate	No response	Total
Respondent's level of education	No formal education	29 (6.4%)	12 (2.6%)	15 (3.3%)	8 (1.8%)	0 (0%)	90 (19.7%)	154 (33.7%)
	Primary	13 (2.9%)	51 (11.2%)	58 (12.7%)	15 (3.3%)	2 (0.4%)	62 (13.6%)	201 (44.0%)
	Secondary	2 (0.4%)	12 (2.6%)	52 (11.4%)	16 (3.5%)	0 (0%)	10 (2.2%)	92 (20.8%)
	Tertiary	0 (0%)	0 (0%)	3 (0.7%)	1 (0.2%)	1 (0.2%)	4 (0.9%)	9 (2.0%)
	Postgraduate	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.2%)	1 (0.2%)
Total		44 (9.6%)	75 (16.4%)	128 (28.0%)	40 (8.8%)	3 (0.7%)	167 (36.5%)	457 (100%)

Source: Fieldwork, 2014

Table 4.5: Level of education by marital status

		Marital status of respondents				
		Single	Married	Separated	Widowed	Total
Respondent's level of education	No formal education	0 (0%)	64 (14.0%)	4 (0.9%)	86 (18.8%)	154 (33.7%)
	Primary	0 (0%)	139 (30.4%)	7 (1.5%)	55 (12.0%)	201 (44.0%)
	Secondary	0 (0%)	82 (19.9%)	2 (0.4%)	8 (1.8%)	92 (20.1%)
	Tertiary	1 (0.2%)	5 (1.1%)	0 (0%)	3 (0.7%)	9 (2.0%)
	Postgraduate	0 (0%)	0 (0%)	0 (0%)	1 (0.2%)	1 (0.2%)
Total		1 (0.2%)	290 (63.5%)	13 (2.9%)	153 (33.5%)	457 (100%)

Source: Fieldwork, 2014



Source: Fieldwork, 2014

Figure 4.2: Bar graph

Table 4.4 shows the comparison between respondents and husbands' level of education. Findings revealed that while most respondents had primary education, most husbands had secondary education. The record of no formal education was found to be more than double among the respondents (34%) than their husbands (15.2%). Primary school attainment as the highest educational level was about double among the respondents (44%) compared to their husbands (25.9%). Secondary school attainment was lower among respondents (20.1%) than their husbands (44.1%). Post-secondary educational attainment was found to be far higher among the husbands (15.5%) than among the respondents (2.2%). This finding confirms the position in literature that men access more education than women in many countries like Nigeria (Iruonagbe, 2010d), India (Suguna, 2011), and Kenya (Chege & Sifuna, 2006).

The low level of education of rural women farmers in the study area has the tendency to create challenges for the spread of agricultural innovations and advanced farming methods. Nevertheless, the high access to primary level of education among the respondents can propel their access to empowerment and where they are ignorant of empowerment programmes where available, their husbands can inform and facilitate their access to same. However, the case of widows may be adversely affected if they have low level of education since their husbands are not alive to facilitate their access. Table 4.5 reveals that most respondents (34%) had no formal education which implies a greater difficulty in access to agricultural productive inputs, especially machines and credit facilities.

4.1.5. Religious affiliations

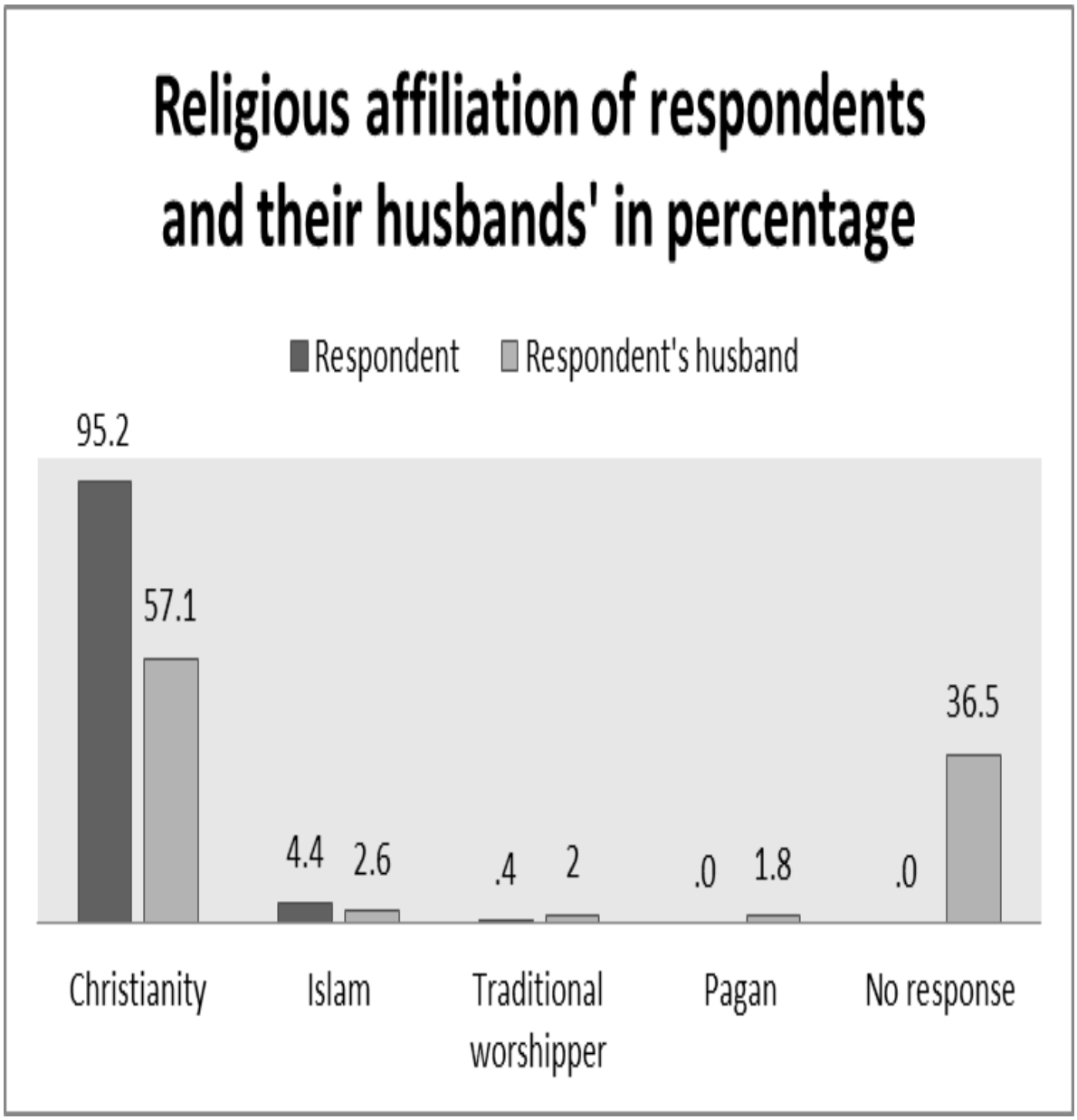


Figure 4.3: Bar graph

Source: Fieldwork, 2014

Religion has been found to be a major determinant of women's access to empowerment opportunities. Figure 4.3 show that most respondents (95.2%) are Christians with their husbands recording a lower percentage of 57.1%. This indicates that the prevailing religion in the study area is Christianity. This finding was accompanied on the part of the women by a high level of positive response to empowerment programmes, where available. This result tends to support the findings of Njoh & Akiwumi (2012) that the Christian religion is favourable to the adoption of empowerment programmes. This has not been the case for other religions such as Islam and Buddhism. In describing the status of women empowerment in Iran, Bukhari & Asim (2013) observed that there are indications pointing to the fact that the wearing of veil serves as a symbol of disempowerment for Muslim women. In her study of the impact of the Buddhist religion on the human rights of Thai women, Peach (2000) revealed that traditional Thai Buddhist culture functions in many ways to legitimate the trafficking industry thereby limiting the human rights of women involved in sexual slavery.

4.2 Land ownership pattern and implication for types of crops cultivated

Table 4.6: Access and ownership of land and crop cultivated

Selected Variables	No	%	Selected Variables	No	%
Owned Any Piece of Land			**Main crop cultivated**		
Yes	82	17.9	Cassava	450	98.5
No	375	82.1	Pineapple	5	1.1
Total	457	100	Maize	1	0.2
Process of Acquisition			Yam	1	0.2
Personal purchase	41	50	Total	457	100
Inheritance	30	36.6	**Size of land determines Crop Cultivated**		
Husband	11	13.4	Yes	12	2.6
Total	82	100	No	445	97.4
			Total	457	100
Size of the respondent's land			**Crop respondent would cultivate if farmland was bigger**		
Less than one acre	21	25.6	Plantain	5	41.7
One – four acres	43	52.4	Rice	5	41.7
Five to nine acres	16	19.2	Pineapple	1	8.3
Ten acres	2	2.4	Kola	1	8.3
Total	82	100	Total	12	100
Method of Farmland Acquisition			**Source of Land Determines the Type of Crop cultivated**		
Husband	326	71.8	Yes	9	2.0
Hire	86	18.8	No	448	98.0
Inheritance	33	7.2	Total	457	100
Personal purchase	10	2.2	**Why respondent would not cultivate a different crop**		
Total	457	100	Main crop women plant here	1	0.2
Why not own land			Farm work is too difficult	447	99.8
No money to buy	252	67.2	Total	448	100
I don't need to own land	87	23.2	**If respondent would cultivate different crop if she owned farmland**		
Women do not own land here	36	9.6	Yes	9	2.0
Total	375	100	No	448	98.0
Size of respondent's farmland			Total	457	100
Less than one acre	223	48.8	**Different crop respondents would cultivate if she owned farmland**		
One – four acres	203	44.4	Plantain	6	66.7
Five to nine acres	26	5.7	Pineapple	2	22.2
Ten acres	5	1.1	Rice	1	11.1
Total	457	100	Total	9	100

Source: Field Survey 2014

Table 4.6 shows that only 82 respondents constituting 17.9% of the respondents owned a piece of land. It also shows that respondents acquired their land through three means: (a) husband (b) inheritance, and (c) personal purchase. Most of those who owned land (50%) acquired it through personal purchase. This is followed by ownership through inheritance (36%). Also, 14% of the respondents who owned land acquired it through their husbands.

Access to farmland revealed a different pattern from the case of land ownership. Access to farmland was mainly through husband as was reported by 71.8% of the respondents. This was followed by those who accessed farmland through hire (18.8%), inheritance (7.2%), and personal purchase (2.2%). This shows that the claims by the Edo State Government that farmlands are given to farmers cannot be substantiated among Esan rural women farmers, as the conventional means of land access (husband, purchase, hire and inheritance) remain. The result also shows that most women do not own land in Esan land. Access to farmland for Esan rural women is still mainly through their husbands.

The general norm is that women are not supposed to own land even though they may have access to it through their husband or father. As such, it is implicitly prohibited for any woman to cultivate perennial crops as this means that the woman is expressing a latent ownership of that land. This will eventually make her lose access to that land. So, in order to prevent such deprivation, a rural woman is discrete enough to cultivate only seasonal or annual crops such as cassava. However, the influence of education and access to some level of income (increase in their socio-economic status) can enable rural women to buy land and cultivate their desired crop.

This finding corroborates the findings of women's access to farmland in Ozalla community (Iruonagbe 2010d), which showed that most of the respondents obtained their farmland through their husbands (53%). It was also reported that those who hired the land fall into the category of the very vulnerable women who were either separated from their husbands, or were widows who were not favoured by their husband's relations and so did not have access to inherited land. Furthermore, it is clear that some widows received the land from their husband's family or were holding the land in trust for their children due to the death of their spouses. The finding of this study further substantiates

4.3. Utilization of advanced farm technologies and level of food production

Table 4.7: Access to advanced farming equipment and food production

Selected Variables	No	%	Selected Variables	No	%
Access to advanced Farming Equipment			**Palm Oil Extractor (Known)**		
Yes	22	4.8	Yes	94	20.6
No	435	95.2	No	363	79.4
Total	457	100	Total	457	100
Pumping machine (Known)			**Palm Oil Extractor (Have)**		
Yes	152	33.3	Yes	0	0
No	305	66.7	No	457	100
Total	457	100	Total	457	100
Pumping machine (Have)			**Palm Oil Extractor (Used)**		
Yes	4	0.9	Yes	11	2.4
No	453	99.1	No	446	97.6
Total	457	100	Total	457	100
Pumping machine (Use)			**Palm Oil Extractor (Trained to Use)**		
Yes	19	4.2	Yes	0	0
No	438	95.8	No	457	100
Total	457	100	Total	457	100
Pumping machine (Trained to Used)			**Palm Oil Extractor (Still Using)**		
Yes	3	0.7	Yes	10	2.2
No	454	99.3	No	447	97.8
Total	457	100	Total	457	100
Pumping machine (Still Using)			**Rice Planter (Known)**		
Yes	17	9	Yes	1	0.2
No	440	96.3	No	457	99.8
Total	457	100	Total	457	100
Food Increase			**Extent of Food Increase**		
Yes	20	90.9	Less than double	12	60
No	2	9.1	Double	3	15
Total	22	100	More than double	5	25
			Total	20	100

Source: Field Survey, 2014

the trend of land ownership and accessibility pattern by women farmers in developing nations, especially on the African continent (Deininger, Xia, & Savastano, 2015).

Specific technologies were identified to answer the question on the rural women's access to technology. These include Cassava uprooter, cassava peeler, cassava washing machine, cassava chipping machine, rice planter, pumping machine, palm oil extractor, improved seedlings, improved cassava cuttings, pesticides and fertilizers. In addition, the respondents were asked to state any other one they had knowledge of, which was not among those already identified. In the process of data collection, one respondent identified rice planter as an advanced farm equipment. Response was elicited from five categories about advanced farming technologies; (a) Awareness (b) Ownership (c) Usage (d) Training on usage (e) Continued usage.

All the respondents stated that they had no knowledge of cassava uprooter, cassava peeler, cassava washing machine, cassava chipping machine, improved seedlings, improved cassava cuttings, and rice planter; except for one respondent who reported having knowledge of rice planter. They also acknowledged that they do not have any of them; they have never used them; and that they have never been trained to use any of them. Although there was availability of cassava grating machine (see Appendix XII), but the respondents did not regard it as an advanced farming technology because they have been using the machine right from childhood. They were even more concerned about the escalating cost associated with using the machine which they attributed to high cost of purchasing energy such as diesel by the operators for running the machines. For them this was a disincentive for using advanced farming technologies.

For the purpose of clarity in presentation, findings about farm technologies are presented in two Tables. The first Table (Table 4.7) contains advanced farm equipment including the pumping machine, the palm oil extractor and the rice planter, which the respondents reported to be at least aware of. On the other hand, the second table (Table 4.8) consists of the advanced farm techniques, which include improved seedlings, pesticides, and fertilizers.

Table 4.8 shows that 33.3% of the women had knowledge of the pumping machine. It was found that 4.2% have used the machine while only 3.7% were found to still be using the

machine. Furthermore, only 4 women (0.9%) had the machine. Finally, only 3 (0.6%) women reported to have been trained to use the machine.

With regard to palm oil extractor, 20.6% had knowledge of the machine. But none reported having it; 2.4%, have used it while only 2.2% were found to still be using the machine. Finally, none of the women reported having been trained to use the machine.

The level of food production was found to have increased among 91% of those who utilized some of the advanced farm equipment. To determine the extent of food production increase, being cognizant of their inability to accurately measure the outcome of their production, three parameters were established, namely, less than double, double, and more than double. Among those who reported increase in food produced as a result of the use of advanced farm equipment, 60% recorded less than double increase, 15 per cent reported double increase, while 25 per cent stated that they experienced more than double increase.

Table 4.8: Access to advanced farming techniques and food production

Selected Variables	No	%	Selected Variables	No	%
Access to Modern Farming Techniques			**Pesticides (Still Using)**		
Yes	17	3.7	Yes	2	0.4
No	440	96.3	No	455	99.6
Total	457	100	Total	457	100
Improved Seedlings (Known)			**Fertilizer (Known)**		
Yes	1	0.2	Yes	219	47.9
No	456	99.8	No	238	52.1
Total	457	100	Total	457	100
Improved Seedlings (Have)			**Fertilizer (Have)**		
Yes	0	0	Yes	9	2.0
No	457	100	No	448	98.0
Total	457	100	Total	457	100
Improved Seedlings (Used)			**Fertilizer (Used)**		
Yes	0	0	Yes	17	3.7
No	457	100	No	440	96.3
Total	457	100	Total	457	100
Pesticides (known)			**Fertilizer (Trained to Use)**		
Yes	32	7.0	Yes	2	0.4
No	425	93.0	No	455	99.6
Total	457	100	Total	457	100
Pesticides (Have)			**Fertilizer (Still Using)**		
Yes	2	0.4	Yes	15	3.3
No	455	99.6	No	442	96.7
Total	457	100	Total	457	100
Pesticides (Used)			**Food Increase**		
Yes	2	0.4	Yes	17	100
No	455	99.6	No	0	0
Total	457	100	Total	17	100
Pesticides (Trained to use)			**Extent of Food Increase**		
Yes	1	0.2	Less than double	11	65
No	456	99.8	Double	1	6
Total	457	100	More than double	5	29
			Total	17	100

Source: Field Survey, 2014

With respect to the use of advanced farming techniques, 7.0% had knowledge of pesticides, 0.4% reported having some pesticides, 0.4% was found to have used and are still using the technology. Only one woman reported having been trained to use the technology. Fertilizers were found to be known to 47.9% of the women. However, only 2.0% had fertilizers. With regard to utilization, 3.7% reported having used fertilizers, while only 3.3% were still using it. Only 2 women (0.4%) reported having been trained to use the fertilizers.

Table 4.7 shows that all respondents who had utilized some advanced farming techniques reported increase in their food production. However, variations were evident in the extent to which the respondents experienced increase in their food production as a result of the utilization of advanced farming techniques. Findings show that the observed variations were in three categories. The first is the 'less than double' category which 65 per cent of the respondents reported. The second category is the 'double' category reported by 6 percent. The final category consists of the 'more than double' category having 29 percent.

From Tables 4.7 and 4.8, among the respondents who have utilized advanced farming technologies, 62 per cent recorded increase in their food production although the increase did not double previous yield. In addition, 11 per cent reported that their food production doubled by the adoption of advanced farm technologies. Finally, 27 per cent stated that they experienced more than the double increase in their food production than their previous harvest before they began to utilize advanced farm machines. This result is consistent with the findings of Food and Agricultural Organization of the United Nations that women could increase yields on their farms by 20–30 per cent if they had the same access to productive resources as men. Consequently, the total agricultural output in developing countries could be enhanced by 2.5–4 per cent with the potential of reducing the number of hungry people in the world by 12–17 per cent (FAO, 2011).

4.4. Impact of agricultural extension services and food production

Table 4.9: Access to agricultural extension services and food production

Items	No. of Respondents	Percentage (%)
Have you attended any training organized by extension service agents		
Yes	1	0.2
No	456	99.8
Total	457	100
If no, why not		
None organized in the community	456	100
If Yes, where		
In the L.G.A.	1	100
When the training was organized		
Less than a year ago	1	100
The agricultural extension training focus		
(a) How to use chemicals	1	100
Does the training hold often		
Yes	0	0
No	1	100
Total	1	100
Has the training increased your food production		
Yes	0	0
No	1	100
Total	1	100

Source: Field Survey, 2014

Table 4.9 indicates that agricultural extension services are not available to most of the respondents in the study area, as only 1 respondent (0.2%) was found to have ever attended an agricultural training. This implies that 456 respondents (99.8%) have not participated in any agricultural extension services. Reasons were sought from other respondents on why they have not attended any agricultural extension training. They all unanimously reported that their non-attendance has been due to the absence of any training organized for them in their communities. By logical reasoning, this position can be said to be true due to the collective structure of rural areas. As such, if any training was organized for any female farmers in the communities, news will be passed around to inform others. It can be deduced, therefore, that no training was organized in the community. The participants in the interviews and focus group discussions unanimously asserted that agricultural extension services were completely absent in their farming occupation.

The single respondent who attended the training reported that the training held at the Local Government Headquarters but that it does not hold often and that the focus of the training was on how to apply chemicals on plants. With respect to increase in food production as a result of attendance of an agricultural training, the respondent reported that there was no increase in food production after the training as she was yet to harvest the crops that she applied the chemicals on. Consequently, it cannot be said that agricultural extension services have impacted positively on food production capacity of rural women in Esan West Local Government Area.

Responses from the focus group discussants and in-depth interviews revealed that most respondents who reported to have been trained received such trainings from their husbands and other family members; none was found to have been trained by extension service officials. This confirms the findings of existing studies that most rural women obtain farming information from their husbands and other family members (Adesiji *et al.*, 2013).

One of the participants reported as follows:

> *We have heard from some people that they are teaching some farmers how to cultivate cassava that will bring much yield and take shorter period to harvest. But on this side of the nation, we have not seen such improved cassava or anyone to teach us how to cultivate them. We have even heard that some farmers can call extension service agents through their telephones to get information. But that is not the case here.*

Response from the in-depth interview with the Head of the Agricultural Department in Esan West Local Government Area supports the foregoing position:

> *It is true that there is an Agricultural Department in the Local Government Headquarter, which is supposed to be involved in training farmers on the most efficient methods to boost their yield and providing them with current farm technologies but there is huge deficiency in funding the activities of that department. We have qualified staff to do what we are supposed to do. You see the ruling party also determines the flow of resources to different areas within the state. We are under the Peoples Democratic Party (PDP) here in the local government whereas it is All Progressive Congress (APC) that is the ruling party at the State level.*

It can be deduced from the above response that political party affiliation can affect the resources for agricultural extension services. Revisiting the Local Government autonomy bill might be helpful in this regard. This is with the hope that it will be resources available in every Local Government Area irrespective of the political party at the State level. It is expected that direct allocation from the Federal Government to the Local Government will enable grassroots developmental projects, including agriculture.

4.5. Impact of credit facilities and impact on food production

Table 4.10: Access to credit facility and food production

Selected variables	**No.**	**%**	**Selected variables**	**No**	**%**
Ever secured Loan			**Why not take Loan**		
Yes	5	1.1	Fear of inability to repay	192	42.5
No	452	98.9	No contact to the bank	158	35
Total	457	100	Bank demand for collateral	60	13.3
Institution of Credit			High interest rate	20	4.4
First Bank	3	60	Not aware of bank lending	11	2.4
Uda Community Bank	1	20	Not needed	10	2.2
LAPO	1	20	Applied for yet not given	1	0.2
Total	5	100	Total	452	100
Time of Loan Access			**Increase in food production**		
Less than one year ago	2	40	Yes	3	60
One to two years ago	1	20	No	2	40
More two years ago	2	40	Total	5	100
Total	5	100	**Level of increase in food production**		
Decision maker on loan			Less than double	0.999	33.3
Self	4	80	Double	1.002	33.4
Husband	1	20	More than double	0.999	33.3
Total	5	100	Total	3	100

Source: Field survey, 2014

Access to credit facilities was found to be low as only 5 (1.1%) respondents out of 457 were found to have accessed bank loans as shown in Table 4.10. It was discovered that the money they spent on farm work was saved through their community cooperative, which they refer to as *Akugbe*. However, many of those who did not access loan reported that they had fear of inability to repay (42.0%), no contact to the bank (34.6%), the frustration that comes from the bank's demand for collateral (13.1%), and high interest rate from the bank (4.4%). Other reasons presented include, not aware of bank lending (2.5%), not interested in the loan (2.2%) and applied for but not yet given (0.2%).

Findings showed that most respondents (60%) who have accessed credit facilities obtained theirs from the United Bank for Africa (UBA), which is a commercial bank. On the other hand, 20 percent accessed their loans from LAPO (Lift Above Poverty), a Non-Governmental Organization (NGO) outfit specialized in giving out loans to individuals as a strategy for poverty alleviation among rural dwellers. The final 20 per cent who had accessed loan reported that they obtained theirs from UDA Community Bank, which is a micro-finance bank. In terms of the time the credit facility was extended them, 40 per cent reported less than a year; 20 per cent reported one to two years; and 20 persons mentioned more than two years ago. Furthermore, findings show that most of the respondents (80%) made the decision on how to utilize the loan taken by them on their own. On the other hand, 20 per cent of the respondents reported that the decision was made by their husbands.

Impact of loan on food production revealed that all the respondents (60%) who had obtained the loan for a period of one or more years reported increase in food production. The other respondents reported no increase as they were yet to fully utilize their loan because it has been less than a year ago. The results show that all the respondents who recorded increase in food production as a result of their access to credit facilities had various levels of increases. It was found that 33.3 per cent recorded less than double increase in their food production. In addition, 33.4 per cent reported that their food production doubled, while 33.3 per cent stated that they experienced more than double increase in their food production. It shows that rural women farmers can double their food production if they have access to credit facilities.

The women lamented that lack of access to finance remains an enormous barrier to their food production as they need necessary funding to be able to purchase chemicals, fertilizers, pay for farm labour and so on. High cost of chemicals was unanimously stated in the focus group discussions as a limiting factor in the use of the pumping machine for weeding. One of the discussants explained:

> *There are different types of chemicals that are used. It depends on the type of crop planted in the area you want to use the chemical to weed. There is chemical for pineapple farms, another for a cassava farm, still another for a cocoa plantation and so on. And they are in different sizes with various prices too.*

Another discussant added:

> *They are not cheap at all. You see, you have to apply the chemical three times before harvest. If you buy it three times like that how much will be your profit after harvest?*

The women also expressed their view in the focus group discussion that the low returns from farm produce are due to bad roads and high cost of labour:

> *Since we have to leave our land fallow for some years and some of the land near the villages are sold or used for buildings, our farms are now far into the bush. Our farm roads are very bad. Many drivers don't want to come and carry our produce from the farm due to bad roads. Anyone of them who agrees to come charges us high cost of haulage.*

> *In the end, people price our produce as if they are rags. But we still sell because they will spoil and that will be worse for us.*

Another added:

> *Even cost of hired labour is also affected by the far distance of our farms. Many labourers do not like to come and work in our farms because the location of the farm is far from the residential areas.*

> *We are really suffering here. No one is willing to help us. Yet we need to farm to eat and take care of our families.*

The Head of the Agricultural Department in the Local Government revealed the recognition of the local government administration of these challenges and the efforts

they are making in collaboration with International Fund for Agricultural Development (IFAD) officials in addressing the challenges of Esan rural women farmers:

> *The Local Government is making much effort to tackle the challenges of rural women farmers in this area but it is just that there is poor funding from the State government. We are sometimes weakened by the negligence on the part of the State government, who keeps making promises without fulfilling them. Right now, we are grossly short of funds for running the local government administration. For over four months now, the local government staff salaries have not been paid due to lack of funds. We have the intention of assisting these women farmers because we are very much aware of their challenges since we are close to them, but the channels of income are very almost shut. We know that many of the roads are in a state of disrepair and the agricultural machines are virtually absent among other challenges. Nevertheless we are trying our best to intervene. Thankfully, the Local Government administration has received some support from IFAD officials who give loan to some of the women who belong to large cooperatives to farm and pay back after sometime. But one challenge we are faced with is the small size of the farmland they cultivate, which prevents them from accessing some of the few facilities we have such as the tractor, which some commercial farmers come to hire. We know we still have a long way to go. We will keep trying knowing that we will overcome in the nearest future.*

These results show that Esan rural women farmers are in dire need of financial assistance for farming purposes from the appropriate authorities including established cooperative groups, agricultural development banks, micro finance banks, and other relevant agencies and organizations. The provision of credit facilities enables the women farmers to acquire adequate resources to take care of their farm needs thereby improving their agricultural activities such as provision of quality grains, cassava cuttings and farm labour (Iruonagbe, 2010d).

4.6. Test of hypotheses

Hypothesis one

The source of farmland will determine the type of crops cultivated by Esan rural women farmers.

Table 4.11: Chi-Square test analysis of the relationship between source of farmland and type of crops cultivated.

Source of Farmland	Cassava	Pineapple	Maize/Corn	Yam	Total
Husband	325(323)	3(3.6)	0(0.7)	0(0.7)	328
Inheritance	32(32.5)	0(0.4)	0(0.1)	1(0.1)	33
Personal purchase	10(9.8)	0(0.1)	0(0.0)	0(0.02)	10
Hire	83(84.7)	2(0.9)	1(0.2)	0(0.19)	86
Total	450	5	1	1	457

Values in the parentheses are the expected frequencies.

From SPSS output, χ^2 calculated = 18.978.

Degrees of freedom = (No. of rows -1) × (No. of columns -1)

= (4 - 1) × (4 - 1) = 3 × 3 = 9.

The contingency coefficient = $\sqrt{\frac{\chi^2}{\chi^2 + n}}$

where χ^2 = 18.978, n = 457

$C = \sqrt{\frac{18.978}{18.978 + 457}} = \sqrt{\frac{18.9787}{475.978}}$

$C = \sqrt{0.0399} = 0.20$

This result shown in Table 4.11 reveals that there is a significant relationship between source of farmland and type of crops cultivated. The calculated χ^2 (18.978) is greater than the χ^2 critical (16.92) at 0.05 level of significance with 9 degrees of freedom. Therefore, the source of farmland determines the type of crops cultivated by the rural women in Esan West Local Government Area (EWLGA) of Edo State.

This result that restrictions are often placed on land by the owner with respect to what can be cultivated on it in rural areas supports the findings of Iruonagbe (2010d) among women farmers in Ozalla community in Edo State. Once the land is not owned by the woman, there will be restrictions as to how that woman will farm the land or what crops to grow because access is temporary and conditional. The response from the focus group discussion revealed that Esan rural women farmers do not determine the type of crops they cultivate but their husbands. One of the respondents mentioned that:

> *Most of us still obtain our farmland from our husbands. As such, the crop we cultivate has to be of short life span. This is the norm. Women are not expected to cultivate perennial crops here as our husbands may demand for the land for use at any point in time.*

Another respondent added that:

> *If I were the owner of the land I always use for farming, I would have started cultivating plantain and pineapples by now. I know one woman in this community; she bought a large plot of land for farming. She cultivated many pineapples and plantain in the land. The pineapples are already yielding some money now. But I can't do that because I do not own my farmland.*

In summary, the result of hypothesis one supports the view in existing literature that land ownership pattern determines the type of crop cultivated.

The avenues of accessing farmland is increasing for Esan women farmers, as they are not restricted by culture not to buy land if they have the money to purchase it. But they do not often cultivate all the farmland available at their disposal. The possibility of women accessing land through personal purchase was confirmed by the in-depth interview session. The respondent stated that:

> *Women can own land here. Once they can have the available resources, talking about money, to buy a piece of land they deem desirable, they can buy it. Our culture does not restrict them from doing so. Many women own land.*

However, Esan rural women farmers are faced with several constraints that limit them from cultivating the portion of land available to them for farming. Some of these challenges were expressed by the respondents during the focus group discussions. Some of the women responded thus:

> *It is one thing to have land for farming and another matter entirely to have the required strength and money to cultivate it.*

Another respondent added:

> *There are greater challenges that need to be addressed. What about transporting the produce to the house for storage and how will you store much produce from damage with this kind of local method we use for storage. We have heard that there are new ways of keeping farm produce without fear of damage for a long period of time, but we have not seen anyone.*

It becomes clear that land availability must be combined with modern farming technologies to accomplish maximum output from Esan women farmers.

In buttressing the numerous challenges experienced by Esan rural women farmers including poor state of roads, crude storage facilities, land grabbing in Uke community by the State University (AAU, Ekpoma), high cost of farm chemicals and high cost of hiring farm labour, the King of Ukhun added a major constraint. He revealed that women, including men, are being highly limited in their farming activities as a result of nomadic herdsmen. The King asserted as follows:

> *We have a current challenge at hand now coming from the intrusion of nomadic herdsmen. Their cattle invade our crops in the farm and the herdsmen don't care. We have made several complaints to the law Court but we are not duly compensated. The law Court simply demands that the herdsmen to pay a token amount of money to the farmers. This is really affecting farming activities in this community. Something has to be done otherwise it may lead to community crisis.*

Hypothesis two

Access to advanced farming technologies will result to increase in food crop produced by the rural women farmers in the study area.

Table 4.12: Relationship between Access to Farming Technologies and Food Crop Produced by Rural Women in the Study Area

	Has your food production increased						
Access to advance farming technologies	Yes	No	Total	χ^2 calc	P-value	Phi coeff.	p-value
Yes	16(0.6)	1(16.4)	17	377.08	0.000	0.939	0.000
No	1(16.4)	439(423.6)	440				
Total	17	440	457				

df = 1, $p < 0.05$, significant at 5%, χ^2 critical = 3.84

Table 4.12 shows that the χ^2 calculated (337.08) is greater than χ^2 critical value of 3.84. The phi coefficient obtained was 0.939, which is an indication of a strong or positive relationship between accessibility to advanced farming technologies and quantity of food produced. The p-value is less than 0.05 ($p < 0.05$). Therefore, access to advanced farming technologies increases the quantity of food produced by the rural women of EWLGA of Edo State.

The importance of modern farming technologies is revealed in the results of hypothesis two. The results confirm the existing position that modern farm technologies have the propensity to boost food production (FAO, 2013). Some of those who could not access modern farming technologies mentioned that they were constrained by lack of awareness about them. Others reported that financial resources to purchase the materials like fertilizers and pesticides were their limitations. These results buttress the need for massive rural enlightenment campaigns on modern farm technologies and the release of credit facilities for the women to be able to purchase them.

Hypothesis three

Access to credit facilities for farming will lead to increase in food crop produced by rural women in the study area.

Table 4.13: Relationship between Access to Credit Facilities for Farming and Food Crop Produced by Rural Women in the Study Area

Access to credit facilities	Increased production		Total	Stat.	P-value	Phi coeff.	p-value
	Yes	No					
Yes	13(0.7)	5(17.3)	18	226.00	0.00	0.733	0.000
No	4(16.3)	435(422.7)	439				
Total	17	440	457				

df = 1, χ^2 critical = 3.84

Data in Table 4.13 reveal that the χ^2 calculated value of 226.00 is greater than χ^2 critical value of 3.84 at 0.05 level of significance. Furthermore, the phi coefficient of 0.733 was obtained which shows that there is a strong relationship between access to credit facilities and increased food production. The p-value is less than 0.05. Therefore, accessible to credit facilities increases food production among rural women farmers in EWLGA of Edo State. Due to the aging population of Esan women farmers, they have to rely on hired labour for farming. This places a huge financial demand on the women, as they are often poor (Aina, 2012). These results reveal that the food production of Esan rural women farmers can be boosted if they are granted access to credit facilities for farming.

4.7. Multiple regression analysis

Table 4.14: Multiple regression result between increase in food production and possible explanatory variables

Variables	Unstandardized coefficient	standardized coefficient β	F-value	p-value	t-value	P	R^2	Adj. R^2
Constant	-48.342	-			-6.19	.000		
Age	-.01	-0.006			0.354	.723		
Marital status	.020	0.002			0.087	.931		
Level of education	-.294	-0.013			-.727	.467		
Land Ownership	.270	0.006	464.48	0.000	.358	.720	.945	.892
Access to agricultural extension	.431	0.003			0.219	.827		
Access to credit	19.16	0.108			6.91	.000*		
Access to modern farming techniques	91.92	0.944			59.46	.000**		
Access to modern farming equipment	1.41	0.016			1.03	.306		

*Significant at p<.05
Dependent variable: Food production

The fitted multiple regression equation can be expressed as:

FP=-48.342-0.01Age+.020MS-.294LE+.270LO+.431AAE+
1.92ACF+91.92AMFT+1.41AMFE

Where, FP = food production, MS = marital status, LE = Level of Education, LO = land ownership, AAE = Access to agricultural extension, ACF = access to credit facilities, AMFT = access to modern farming techniques and AMFE = access to modern farming equipment.

Result of multiple regression as presented in Table 4.14 shows that age, marital status, level of education, ownership of land, access to agricultural extension, access to credit, access to modern farming and access to modern farming equipment accounted for 94.5 percent of the variation (increase) in food production. The adjusted r-square of 0.892 was obtained which also means that the 8 independent variables explained 89.2 percent of the variation in food production. The F-value of 464.48 is greater than the critical F of 1.96 at 0.05 level of significance. This means that the multiple regression model is adequate in explaining the relationship between food production and the eight possible predictors used. The results also show that age ($\beta = -0.006$, t = 0.354, p<.723), marital status ($\beta = 0.002$, t = -0.727, p>0.05), land ownership ($\beta = 0.006$, t = 0.358, p>0.05), access to agriculture extension service ($\beta = 0.003$, t = 0.358, p= >0.05) and access to modern farming equipment ($\beta = 0.016$, t = 1.03, p>0.05) did not significantly increase food production in the study area. The result further reveals that access to credit facilities ($\beta = 0.108$, t = 6.91, p<0.05) and access to modern farming techniques ($\beta = 0.944$, t = 59.46, p<0.05) both had significant positive influence on food production. The standardized coefficients were positive which means that access to credit facilities and modern farming techniques contribute positively to increase food production. This result implies that if women farmers in the study area are given adequate access to farm techniques and credit facilities, they will significantly boost their food production. Among the explanatory variables, accessibility to modern farming techniques had the highest standardized beta coefficient ($\beta = 0.944$) which means that access to modern

farming techniques is the major factor that significantly influenced food production in the study area. The major farming technique found among Esan rural women farmers was fertilizer. This result corroborates the findings in existing literature and qualitative data of this study.

4.8. A brief report of the Non-Participant Observation at the International Institute for Tropical Agriculture (IITA), Ibadan, Nigeria (NPO 1)

The visit to IITA centre at Ibadan was to identify the current modern farming technologies available in the centre. On arrival, the researcher was given a tour of the various parts of the centre by some officials of the Institute. The cassava farm was the first point of call where the researcher was informed of the various types of cassava cultivated. It was explained that differences exist between the various species with respect to starch content, growth and maturity rate, among others. The method of cultivation was also described to the researcher by the guide, who explained that specific distance must be maintained between one cassava cultivar and the other while planting; otherwise poor yield could result. Variations in the time of harvesting was also mentioned to the researcher, stating the period for a cassava plant to be harvested was between 8 and 9 months which was said to be a breakthrough unlike the traditional methods which require about 2 years or more before harvesting. The custom made lake, which provides irrigation for the farm was also visited.

Cassava seeds were later shown to the researcher, which are being tested for hybridization to produce better species of cassava products. Furthermore, a bundle of cassava stems which is available for sale to commercial farmers was shown to the researcher. Also, a very big cassava tuber harvested from a part of the cassava farm was shown to the researcher as an evidence of their productivity. Also, some machines for processing cassava produce were shown to the researcher. The cassava uprooter, grinder, drying, filtering and frying machines were also cited.

Finally, the researcher was taken to the grains aspect of the farm. Fresh maize plants were seen and the storage centres were shown where harvested beans, maize, cowpea, and others are treated to prevent post-harvest loss.

Upon interaction with the officials, the researcher sought to know how these technologies were transferred to farmers, especially rural women, who are mainly cassava producers. One of the officials responded as follows:

> *The processes involved in technology deployment are cumbersome. There is the financial aspect and then maintenance aspect. If they are deployed to rural areas, it takes some time for rural farmers to adopt them. In some cases, they utterly reject these innovations. However, we have some private commercial farmers who come to patronize us and they are doing very well with our products.*

4.9. A brief report of the Non-Participant Observation at the Farm Settlement in Ekpoma, Edo State (NPO 2)

The farm settlement in Ekpoma in located in Emaudo Community. Coming down from the steep of Emaudo busy district towards the Farm Settlement, one is greeted with a large green expanse of land which constitutes the area of the Farm Settlement. The structure of the residential quarters reveals their colonial origin. The residential quarters had solid walls with about four walls constituting a block. Although they were old, due to lack of proper maintenance, they were still very strong. Upon arrival, some women were seen preparing their wares for the market, while others were already returning from the market. Going around the vicinity, the researcher had an interaction with one of the farmers who introduced himself as just “Mr. Patrick”. He was excited to interact with the researcher after the researcher introduced herself and the purpose of her visit. Assuming an air of mastery, he pointed towards the large expanse of land saying:

> *You see this place, at a time this farm could produce rice enough to feed all the people that live in this Local Government Area and beyond. That was also the same for palm oil. This farm was known for rice and palm oil production apart from other produce, but now everything has changed. The government is not supporting us at all. There is no funding from the government to produce crops and maintain the farm. Production is almost nothing. People hardly come here. We don’t understand what is happening.*

This position is corroborated by the documentation of Okojie (1960) on the occupation of Esan people in pre-colonial times. This was confirmed that rice production was the main crop cultivated by farmers in Ekpoma. In the same vein, Omofonmwan & Kadiri (2007) revealed that the cultivation of rice in Edo State had declined. Their findings presented ten factors that are responsible for the anomaly. These are stated below in order of importance with number one being finance. Others are:

i. Pest, diseases & rodents;
ii. Low returns;
iii. Competition from cassava;
iv. Use of crude implements;
v. Lack of modern farm inputs;
vi. Transport problems;
vii. Illiteracy;
viii. Ageing farming population; and
ix. Lack of extension workers.

4.10. Some case studies

To buttress the views on the access and ownership of land among Esan people, there was a need identify some case studies on the prevailing practice of land access and ownership by Esan rural women farmers. To maintain the privacy of the participants, their actual names were not mentioned in the report of each case. These case studies were pointed out during an interaction with some of the respondents. The women mentioned here were not participants of the survey because they were more than 70 years. The researcher assured the participants their responses will be used for academic purposes only.

Case one

Mrs. Uduojie Imioyabhagbon hails from Ukpoke, Ekpe but her husband was a native of Eguare. She lost her husband when her children were still very tender. Before her husband's death, he owned several plots of land at different locations in Ekpoma including Ukpenu and Idimigun and a house. Upon her husband's death, she was made to hold the properties in trust for her five children consisting of three males and two females. She remained in the husband's house to raise the children with the husband's properties. The woman also cultivated the land with her children for food and sale without threat from her in-laws. Today, her children are grown fully mature. They are all married and have children. Among the children are a barrister and a businessman who reside outside the state. Recently, they built a new family house. She is old now approaching 80 years and so, farming is no longer her main occupation. In fact, she spends most of her time at home. She depends on her children's remittances for upkeep.

Case two

The case of Mrs. Ekpen Odiase is a pathetic one. She is polygynously married; her husband had about five wives. Although only about four were customarily married into the husband's house, many other women including Ekpenose had children for the man. Since she was not customarily married into the household of the man, she was still resident in her father's house where the late husband came to visit. Before his death about 20 years ago, she had borne four children consisting of two boys and two girls for the husband. Before his death, the children were sometimes called to accompany other children to their father's farm to work. As such, other members of the family were fully aware of her membership in the family including her children. After harvest, the man usually provided some money for the children's upkeep. When he died, the properties were put in trust in the hand of the eldest son to utilize same for the upbringing of other members of the family. However, since the husband's demise, no remittance has proceeded from her husband's family to her children. She has had to depend on her father's landed properties to cater for the children.

Case three

Mrs. Agbonfure Eghonghonmenvon remarried after her first marriage ended childless. In her new family, she became the second wife since her new husband already had a wife before her arrival. A few years into her marriage, she bore a baby girl for the new husband. After that, she could not have any other child for her husband; the co-wife had (2) two sons for the husband. About 35 years later, the husband died. There were customary issues around the sharing of his properties among the children. Since the tradition of male inheritance had been established in the community, there was no need to expect the late husband to have legal document with which to determine how the properties will be shared among the children. The male automatically inherited their father's properties. However, she was given a piece of land to cultivate yearly for her upkeep and that of her child. But she did not have the right of ownership to the land and so neither she nor her daughter inherited the husband's properties.

4.11. Discussion of results

A very clear result of this study is that Esan rural women farmers are aging with the mean age being 48 years. On the other hand, a strong reluctance from youths, especially the male, to engage in farming was reported from the women farmers. This result calls for the mechanization of agriculture to attract youths to agriculture. Persistent refusal of Esan youths to engage in agriculture, especially food crop production, will continue to make the burden of food production to be heavy on Esan women rural farmers and this will have grave consequence for food security. The in-depth interview with the Personal Assistant to the Local Government Chairman reported that several frantic efforts to engage youths in agriculture have been made but without success:

> *The local government is making effort to attract youths to agriculture but it is just that the youths are not interested because their eyes are on quick money. And you know agriculture takes some time to yield profits, at least a year. These men prefer to engage in politics or commercial motorbike services, which give them daily income. A few years back, some youths were sponsored by the local government to go and study different aspects of agriculture, such as snail keeping and fishing farming in one of the Universities of Agriculture in Nigeria. Upon their return, they turned their backs on agriculture. They chose other occupations that will fetch them quick cash. Upon consultation with them, they mentioned that they were willing to repay the amount that was spent on sponsoring them in the University of Agriculture. But that was not the initial bargain.*

In addition, it is clear from the results of the study that there is a strong correlation between the marital status of respondents and their access and ownership of land. Marital status was found to be vital to access land, as access to land often requires a male, which could be a husband or a male relative (in some cases, male children). Women do not inherent properties in Esan land because of the prohibition enacted by the unwritten rule of primogeniture. The rule specifies that only the male children, in most cases the first male child, should inherit properties on behalf of other children in a family. In a deeper sense, wives are regarded as properties themselves to be inherited upon the demise of the husband. However, wives can hold land in trust for their male children as evident in case study one. This practice is often done strictly on the account that the wife in question has male children (Osagie & Otoide, 2015). This practice has made many Esan women farmers to have greater access to land for farming. This finding corroborates the findings

of Iruonagbe (2010d) among Ozalla people of Edo State, where the rule of primogeniture also prevails in terms of property inheritance.

Findings regarding access to land were such that most respondents agree that land was not a problem, although only 17.9% owned land. They reported that they could access land through their husbands, purchase, and from the community land. Some of the respondents who did not own land mentioned that land ownership is not a challenge to farming. This position was expressed by one of the respondents as follows:

> *Land is not the problem for us here. We can get land from our husbands and we can also buy land if we can afford it. Also, if it comes to the worst, the community land is available. But how will you cultivate a big land when you don't have the money to pay labourers for land preparation, planting, weeding and harvesting?*

This position implies that Esan rural women farmers have high access to land for farming. Confirmation of this result has been documented in existing literature. In assessing women farmers' access and use of land for agriculture in Anambra State, Enwelu *et al.* (2014) found that women farmers had multiple sources of land for farming such as through the husband, inheritance, personal purchase and community land. They concluded that women had high access to farm land for agricultural purposes.

On the other hand, the result of hypothesis one reveals that although women have access to much land for farming the type of crop they cultivate is determined by the source from which the land was accessed. Hence, land ownership becomes vital if women have the desire to determine the type of crop to cultivate.

The poor access of Esan rural women farmers to farm equipment and techniques derive from several reasons: (i) scarcity of the equipment within their communities; (ii) lack of awareness of the availability of such farm technologies; (iii) the women do not have the financial resources to patronize the centres where some of these facilities, like the palm oil extractor, exist; and, (iv) the small size of farm holding of the women farmers, which makes it costly to employ modern farm technologies. This expands existing literature such as Jiggins *et al.* (1997), who asserted that women's lack of access to farm inputs including extension services stems from the fact that women are not classified as farmers in Nigeria but farmer's wives. In addition, Adesiji (2013) found that scarcity of extension

services to farmers, both male and female, is a common phenomenon in Nigeria, even though agriculture engages more than 60 per cent of the Nigerian labour force.

The results of hypotheses two and three show that there are significant relationships between access to farm technologies as well as credit facilities and food production. Specifically, the results reveal that some respondents recorded increase in food production as a result of their access to farm technologies and credit facilities. However, though the number of microfinance institutions is increasing in Nigeria, as noted by Anthony, Gabriel & Arikpo (2015), the impact of same is hardly felt among Esan rural women farmers as only 1.1 per cent of the respondents had accessed loan. Those who had not accessed loan blamed it on high collateral demand from bank officials, illiteracy, lack of awareness of credit facilities and fear of inability to repay. In addition, some respondents were not interested in bank credit at all because they felt that they were now too old to take loan to do farm work. In the same vein, poor access to farm techniques was recorded among the women farmers. From the non-participant observation, the officials of IITA blamed this on the failure of government agencies to deploy farm technologies which have been developed at the institute to boost farming operations.

In summary, the results from this study show that Esan rural women farmers are grossly disempowered in their food production endeavor due to absence and inadequacy of required agricultural inputs in the rural setting. All the relevant institutions established to address this issue have displayed quantum negligence. In essence, it is evident that there is huge failure of multilateral agencies, Nigerian government at all levels, Non-Governmental Organizations and family members to support rural women farmers for improved food production in Esan West Local Government Area. The World Bank and the United Nations Development Programme (UNDP) are among multilateral agencies supporting rural women farmers in developing economies to boost food production. One related programme by the World Bank for women, which was expected to support rural women farmers' empowerment was enunciated in the Millennium Development Goals number three articulated as "Promote *gender* equality and *empower women*". It should be recalled that the Millennium Development Goals (MDGs) are eight international development goals that were established as an aftermath of the Millennium Summit of the United Nations in 2000, following the adoption of the United Nations Millennium Declaration. The goals were to be achieved over a fifteen year period

being between the year 2000 and 2015. The substantial inability of the World Bank to achieve its set goals by the year 2015 has stimulated the adoption of a new target captioned “Post 2015 Development Agenda” known as Sustainable Development Goals.

Fadama project is one of the community driven development projects (CDDP) supported by the World Bank for agricultural development in Nigeria. The National Fadama Development Project (NFDP) popularly known as Fadama was established to reduce rural poverty and increase food security by facilitating farmer’s access to financial and technical resources (Oladoja & Adeokun, 2009; Porter & Zovighian, 2014). So far, three phases of Fadama projects have been established. The first phase started in 1990 followed by the second in the year 2004 and the last one which was conceived in the year 2007 commenced in 2009 till date (Agwu & Abah, 2009; Agbo, 2012; Olaolu, Akinagbe, & Agber, 2013). It was reported that the World Bank has recently committed ₦33.6bn to Fadama III in Nigeria (Idachaba, 2015). It is on record that though the first phase of Fadama started on a nation-wide basis in 1990, it was only in 1996 that it started in Edo State, specifically in Benin City (Olumese, 2014). The delay in starting in the State headquarters could be connected to its poor performance in Esan West Local Government Area of the State. On the contrary, studies done in other parts of Nigeria show that many farmers have benefited from the Fadama projects: Adamawa (Adamu & Phoa, 2012); Delta (Achoja, 2014); FCT (Alabi, Ogbonna, Lawal, & Awoyinka, 2014); Kaduna (Simonyan & Omolehin, 2012); Ondo (Folayan, 2013); and, Osun (Ayanwale & Alimi, 2004). But this was not the case with Esan rural women farmers.

The response of participants in the focus group discussions revealed that Fadama project has become a tool of exploitation by the project officials instead of empowering the women farmers. This report of exploitation was found to be similar in all the seven communities studied. According to the discussants,

> ***A.*** *Fadama officials were here. They asked us to form ourselves into groups. We did that. Another time they returned, they asked us to pay one thousand naira (₦1000) each for registration. They even collected money from us for other things.*
>
> ***B.*** *My money with them is more than three thousand naira now.*

C. *They wrote down our names. They said they will return to give us money to do our farm work.*

D. *After some months, we heard that they will soon come and give us the money they promised us. But nothing has happened after many years now. We are still waiting for them.*

E. *After then, there was news that the money has been released by the State governor in Benin City. Later, when the money did not get to us, we started asking questions and some people said that the money has been shared among politicians and traditional rulers for their private pockets.*

One of the discussants, who introduced herself as one of the political women leaders of the party she belongs retorted;

F. *I am a politician. I am a woman leader of my political party. I have not seen any money like that shared among us.*

Another responded,

Those politicians who share the money are at higher levels than yours.

Consequently, another discussant suggested,

Any form of assistance that is intended to support rural women farmers, especially money, should be given to the women directly; not through any intermediary, whether political or traditional representative.

This suggestion is a sign of loss of confidence in the traditional rulers and local government officials. Yet, these institutions are supposed to attend to the needs of the people. If they therefore become dysfunctional, then they will have to be discarded and a new social structure becomes inevitable.

Commercial agriculture development project (CADP) is another project facilitated by the World Bank to advance agricultural production in Nigeria. It was established to strengthen agricultural production systems and facilitate access to market for farmers (Ogen, 2007; Ayegba & Ikani, 2013). Unfortunately, Edo State is not included among the participating states which include Cross River, Enugu, Kaduna, Kano and Lagos States. Women-in-Agriculture is another World Bank assisted project in Nigeria specifically for

women, whose impact has not been felt by Esan rural farmers (Odurukwe *et al*., 2006; Ogunlela, 2009).

The failure of government policies and programmes to improve food production among rural women farmers in Esan is traceable to the wanton powerlessness associated with the implementation of Nigerian past national development plans, non-effectiveness of established institutions and inappropriate policies (Nura & Tabiu, 2014).

Evidences from this study show that there are positive relationships between access to infrastructure and agricultural productivity. Availability of infrastructure implies the presence of resources for constructing new roads and for maintaining roads that lead to communities and selected agricultural activities. This study reveals that infrastructure is grossly lacking in Esan West Local Government Area. For instance, the farm settlement scheme is in shambles as seen from the report of the non-participant observation (NPO 2). This result buttresses what has been observed in the literature that farm settlements in Nigeria have become a financial failure (Olatunbosun, 1971; Idachaba, 1985).

In the family institution, support from family members is vital to the empowerment of rural women farmers knowing that there is an unwritten pattern of division of labour among families in rural areas (Doss, 1999; Ojo, 2001). Men are often expected to prepare the land for cultivation and harvesting while the women plant the crops and process same after harvesting with the support of their children (Iruonagbe, 2012d; ILO, 2013). However, this was not the case from this study as some of the women reported that they are also involved in land clearing. Also, the results show that the children were rarely available to assist the mothers. Consequently, the women were found to be involved in all the aspects of farming from land preparation to processing and marketing (See Appendices XII-XIV).

The respondents were found to be highly involved in harvesting (48.4%), processing (94.3%), marketing (95.8%) and storage (99.3). The continuous high rate of involvement in food processing by Esan rural women farmers with crude methods such as firewood exposes them to high risk on their health by the smoke they inhale daily. This undesirable exposure to smoke, therefore, calls for the adoption of clean, cheap, and inexhaustible sources of energy, especially solar energy. Nigeria is blessed with much of this resource, which the country can harness to boost electricity supply and domestic processing.

Furthermore, men's support is essential to women's access to productive resources as women usually face cultural barriers connected to their subservient positions in the community which men help them surmount. In the case of benefitting from projects, Porter & Zovighian (2014) posit that, men have two structural advantages compared to women with regard to accessing and using project information. The first advantage is that men are relatively more connected to power structures (through which project information is disseminated), and secondly, they tend to be more literate.

A critical observation of the challenges facing Esan rural women farmers documented in this study reveals that most of these constraints emanate from the non-availability of relevant infrastructure in the communities. These challenges can be summarized as emanating from High Rural Infrastructural Scarcity (HRIS), which is traceable to increasing institutional role failure engendered by failed policies (see Figure 4.4).

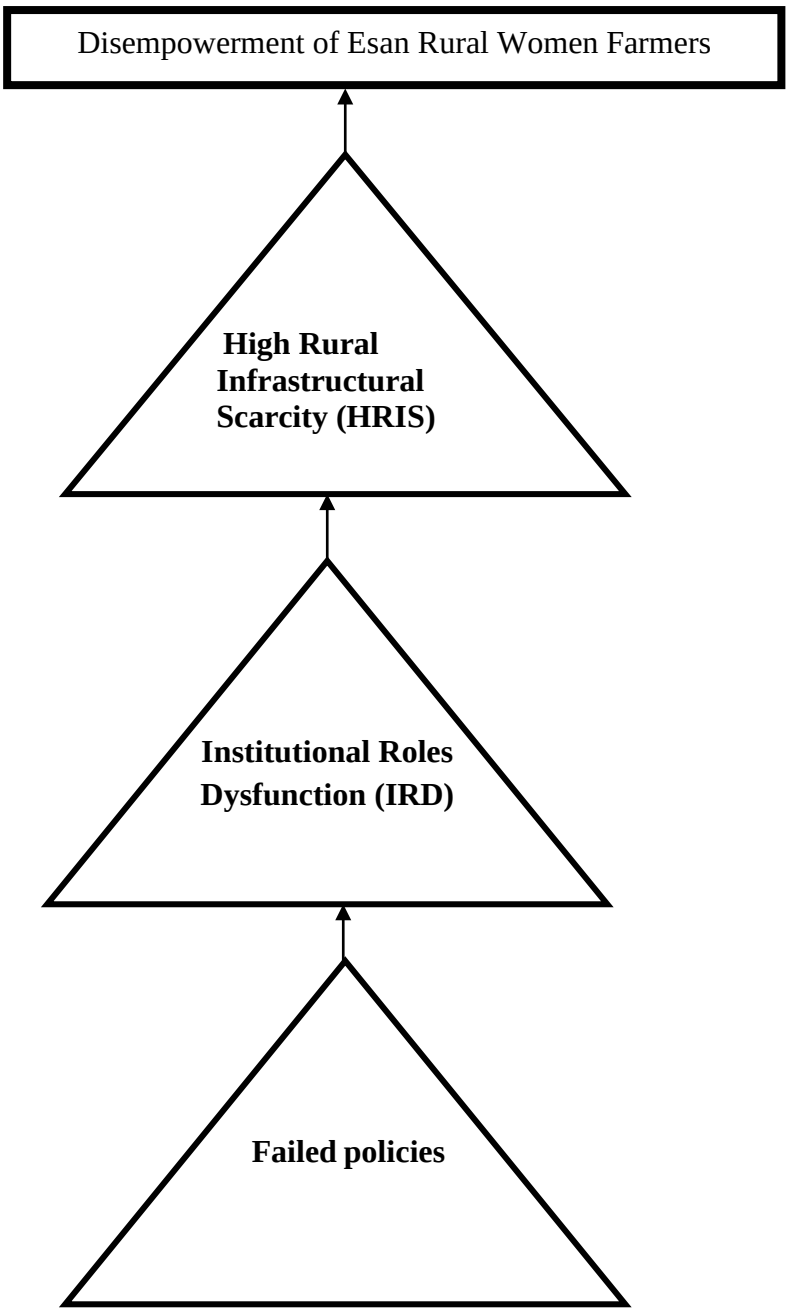


Figure 4.4: The root of women disempowerment in Esan West Local Government Area of Edo State, Nigeria

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary of findings

The purpose of this chapter is to present the summary, conclusion and recommendations of the research. The study was conducted in Esan West Local Government Area of Edo State, Nigeria. Data were collected from the seven traditional clans (kingdoms), which make up the Local Government Area. The aim of the study was to examine the extent to which rural women farmers in Esan West Local Government Area of Edo State are empowered and the effect of the empowerment on food production.

The specific objectives of the study include to:

i. examine the land ownership pattern in Esan West Local Government Area of Edo State and how it affects the type of crops cultivated by rural women farmers in the area;

ii. determine whether rural women farmers in the study area utilize advanced farming technologies and the extent to which the utilization of these technologies enhances the level of food production;

iii. assess the impact of agricultural extension services and women farmers' education on the food production capacity of these women in the study area;

iv. ascertain the extent to which credit facilities are accessible to rural women farmers in the study area and the effect of such credit facilities on food production; and

v. highlight the factors inhibiting rural women's capacity to increase food production.

The evidence of empowerment was anchored on the ability of the women to access land, farming technologies, agricultural extension services and microcredit. In carrying out the study, quantitative and qualitative research approaches were adopted in order to ensure

complementarities, which was needful for the study. A triangulation of methods of data collection was adopted namely; the use of structured questionnaire, Focus Group Discussions (FGDs), In-depth Interviews and case studies. Quantitative data from the survey were analyzed using the Statistical Package for Social Sciences (IBM SPSS).

Frequencies and percentages were used to analyze the research questions. The Statistical Package for Social Sciences (IBM SPSS version 20.0) was employed to run data analysis. Data generated from the qualitative methods including FGDs, In-depth interviews and case studies were analyzed using content analysis approach adjudged to be suitable for a research of this nature (Ritchie *et al*., 2003). Responses to each question were summarized and relevant responses were reported verbatim to project the opinions of the respondents.

5.1.1. Socio-demographic characteristics of respondents

The respondents constituted of active rural women farmers and their age range was between 20 and 69 years old. The distribution of the respondents by age was 20-29 years (5.9%), 30-39 years (19.7%), 40-49 years (24.5%), 50-59 years (26.0%) and 60-69 years (23.9%). The distribution of respondents by marital status revealed that 0.2%, 63.5%, 2.8% and 33.5% were single, married, separated and widowed respectively. This means that most of the respondents were married (63.5%). In each of the selected seven communities, the percentage of respondents who were married were as follows: 81.2% in Egoro, 65.0% in Ekpoma, 46.3% in Idoa, 72.2% in Ogwa, 66.7% in Ujiogba, 66.79, in Ukhun and 65.1% in Urohi. In all the seven communities, more than half of the respondents were married except for Idoa where the majority of the respondents were widowed (53.7%).

With regard to children ever born, the mean number was six children. The distribution of number of children ever born was 0-1 child (1.7%), 2-3 children (12.0%), 4-5 children (29.1%), 6-7 children (27.6), 8-9 children (19.9%), and 10 children and above (9.6%). With regard to the number of children alive, the mean number was 6. However, there was a difference in the group distribution of the number of children. There was an increase in the number of children from zero to seven years while a decline was observed with number of children from eight to ten years and above. The respondents who had 0-1 child was increased from 1.7% to 3.1%, 2-3 children increased from 12% to 14.9%, 4-5

children increased from 29.1% to 31.3%, and 6-7 children was increased from 27.6% to 29.8%. On the other hand, the number of respondent's with between 8 and 9 children declined from 19.9% to 17.5% and 10 children and above declined from 9.6% to 3.4%. This is due to mortality.

The distribution of respondents by their level of education revealed that most respondents had primary education. One hundred and fifty four respondents (33.7%) had no formal education, two hundred and one respondents (44.0%) had primary education, while ninety two respondents (20.1%), nine respondents (2.0%) and one (0.2%) were secondary school certificate holders, had tertiary education and postgraduate degrees respectively. Most of the respondents in Egoro (50.0%), Ekpoma (52.4%), Idoa (43.9%), Ukhun (66.7%) were primary school holders while majority of the respondents from Ogwa (54.2%) and Ujiogba (53.3%) had no formal education.

The distribution of the respondents by their religious affiliation revealed that 95.2 per cent of the respondents were Christians, 4.4% practice Islamic religion while only 0.4% were traditional worshippers. From the result, it can be deduced that almost all the respondents in each community were Christians. In terms of location, in Egoro, 81.2% were Christians while in Ekpoma, Idoa, Ogwa, Ujiogba, Ukhun and Urohi, the percentage of Christians were 98.5%, 80.5%, 100.0%, 100.0%, 100.0% and 100.0% respectively.

The Christian religion has been proven in literature to be the most popular religion in the World as well as the dominant religion that promotes empowerment of its members (Spink, 2003; Pewforum, 2011, Njoh & Akiwumi, 2012; World factbook, 2013). The Christian religion was found to be the main religion in the study area.

The distribution of respondent's husband's level of education revealed that most husbands of the respondents had secondary education. Forty four (15.2%) had no formal education, seventy five (25.9%) had primary education, one hundred and twenty eight (44.1%) were secondary school certificate holders, while forty five (15.5%) had tertiary education. Furthermore, most husbands (90%) belonged to the Christian religion. Although polygyny is practiced in Esanland, most husbands (71.4%) had only one wife. Finally, farming constituted the main occupation (84.8%) of respondents' husbands with yam as the most cultivated crop.

5.1.2. Results of hypotheses tested

Three hypotheses were formulated for this study. The first hypothesis was established to determine whether there was a significant relationship between source of farmland and the type of crop cultivated by Esan rural women farmers. The results showed that that there was a significant relationship. Further analysis showed that the source of farmland for the women farmers determined the type of crop they cultivated. It was observed from further analysis that the women do not often cultivate all their available land for farming due to two main factors: (a) difficulty of farm work due to the continued application of crude implements; (b) lack of microcredit for hired labour.

The second hypothesis was to establish whether or not there is a significant relationship between access to advanced farming technologies and the quantity of food produced by Esan rural women farmers. It was found from analysis that there was a significant relationship, as those who applied some technologies reported increase in their food production.

The final hypothesis, being hypothesis three, was to test whether or not there was a significant relationship between access to credit facilities for farming and quantity of food crop produced by rural women in the study area. The results showed that there was a relationship as most of the respondents who accessed credit facilities recorded increase in the quantity of food they produced.

5.1.3. Results from Focus Group Discussions, In-Depth Interviews, Non-Participant Observation and Case Studies

Evidences from the qualitative data consisting of focus group discussions, in-depth interviews, non-participant observation and case studies reveal that Esan rural women farmers lack access to agricultural productive inputs and operate in difficult situations which limit their capacity for food production. The results buttressed the fact that the following factors established by the qualitative data determine access to agricultural productive input:

Religion of respondent;

Marital status;

Husband’s number of wives; and

Husband's occupation

This helped to strengthen the empowerment theory (GAD) adopted in this study, which posits that the empowerment of men is vital if efforts towards women empowerment is to be achieved.

5.1.4. Findings based on the objectives of the study

1. Access to farmland is not a problem in Esan West Local Government. However, the source of land determines the type of crop cultivated by Esan West rural women farmers.

2. Esan rural women farmers access land mainly through their husbands.

3. Esan rural women farmers have the option to access land through purchase if they are financially buoyant enough to do so.

4. Some Esan rural women farmers can also have access to land through inheritance despite the rule of primogeniture that prevails in the study area.

5. Access to land through children was found to be present among Esan rural women farmers.

6. Cassava is the main crop cultivated by Esan rural women.

7. Esan rural women lack access to advanced farming technologies. The reasons for this were found to be diverse. Poor access of Esan rural women farmers to farm equipment and techniques derive from several reasons:

(i) the failure of government agencies to effectively deploy farm technologies which have been developed at the research institutes to boost farming operations in rural areas;

(ii) the scarcity of advanced farm technologies within the communities;

(iii) lack of awareness by some Esan rural women farmers of the availability of some advanced farm technologies in the communities;

(iv) lack of financial resources on the part of the women to patronize the centres where some of these facilities, like the palm oil extractor, exist; and

(v) the small size of farm holding by the women farmers, which makes it not cost effective to employ advanced farm technologies.

8. Esan rural women farmers do not classify cassava grating machine as an advanced farm technology because they have known and used the machine for several decades.

9. Access to farm techniques and credit facilities was found to be the major variables that increased food production among Esan rural women farmers.

10. There was no evidence of telephone use for farming information among Esan rural women farmers.

11. Poor electricity supply was found to be a dominant constraint to women's interest in technology especially for food processing and storage.

12. Agricultural extension services and training are grossly scarce among Esan rural women farmers.

13. High collateral demand from bank officials, illiteracy, lack of awareness of credit facilities and fear of inability to repay were found to be the topmost limiting factors to women's access to credit facilities. On the other hand, the study found some respondents who were not interested in bank credit facilities due to their perceived old age. They asserted that they were too old to take loans to do farm work.

14. International Fund for Agricultural Development (IFAD) is the only multilateral organization that was reported to be of some assistance to Esan rural women farmers.

15. Fadama project was found to be known to Esan women farmers but there was no evidence of positive impact on the farming capacity of the women.

16. Esan rural women farmers have a way of organizing themselves into groups to raise fund (Akugbe).
17. Bad state of roads was found to be one of the major challenges facing Esan rural women farmers leading to much post-harvest loss.

18. The farm settlement in Esan West is at a dilapidated state and therefore, unable to function in boosting food, which is the purpose for which it was established.

19. Increase in food production was recorded by the women who accessed advanced farm techniques and microcredit, but not in extension services. The absence of increase recorded among the respondent who accessed extension training was found to be due to the time the respondent accessed the training. The respondent reported that she underwent the training less than a year ago and so she was yet to harvest the crops on which the chemicals were applied. The finding on the increase in food production recorded by Esan women farmers as a result of their access to advanced farm technologies and credit facilities is congruent with existing literature that women's yield will increase 20-30 per cent if they have equal access to agricultural productive input.

In summary, this study has demonstrated that Esan rural women farmers remain highly disempowered in their food production endeavor. Despite huge investments from multilateral and government agencies, there was no evidence of this huge investment in the study area. This state of disempowerment is gradually making them to lose interest in farming.

5.2. Conclusion

This study revealed that Esan rural women farmers are grossly disempowered in their efforts at food production. The cause of the state of disempowerment was not found to be significantly connected to patriarchy but mainly as an outcome of rural infrastructural scarcity engendered by institutional role failures.

However, patriarchy was not found to be completely absent among the constraints faced by Esan rural women farmers as land ownership and access are found to be aspects of it. It must be stated that patriarchy has a limiting factor for women farmers because it grants them only right of access to land and not the right of land ownership. This was evident in the findings of this study as only 17.9% of the women owned land and 71.8% of the women got their farmland from their husbands. It becomes clear that only men are entitled to land ownership as dictated by the rule of primogeniture, which permits only the male children to have access to property inheritance. This derives from the spiritual

connotation attached to the ownership of land in the rural setting. The male children are regarded as the ones to keep the family property within the lineage from generation to generation being a society with patrilineal descent. Since the women will be married out to other families, Esan culture demands that the female children benefit from the properties of their husbands in their new family. In the husband's family, women can only hold land in trust for their children, not own it. The practice of land holding in Esan communities predates colonial rule in Nigeria as documented by Osagie & Otoide (2015:6):

> *In pre-colonial Esan as in other communities in what came to be known as Southern Nigeria the area where the people inhabited (villages and towns) were separate from where they farmed. Each village therefore had vast forest farmlands which were held in trust for the people by those in authorities such as traditional rulers and elders. However, individual farmers and families had a number of farmlands which they cultivated rotationally in the shifting cultivation system which they practised. Apart from this, there were also virgin forests, some of which were far away from the villages.*

However, it was observed that Esan rural women farmers are beginning to overcome the challenges of patriarchy associated with land ownership by engaging in personal purchase of land, which grants them right of ownership to land. Those who accessed land through personal purchase was among 50% of the population who claimed to have a piece of land of their own. This constitutes 9% of the total population of the respondents.

Ownership of land is necessary for increased food production (although it may not lead to change in the type of crop produced among Esan rural women farmers), but land ownership needs to be complemented with modern technologies for cultivation and trainings if food production is to increase. Otherwise a woman may own 10 acres of land and cultivate only 2 acres due to the hardship involved in the production, but where farming technologies are available, a small size of land can yield much increase in production. The absence or insufficiency of these complementary agricultural productive inputs including farm machines, improved seedlings, agricultural extension trainings and credit facilities, was found to be the major challenge besetting Esan rural women farmers, thereby hampering them enormously in food production.

The major inhibition to the empowerment of rural women farmers can be referred to as "High Rural Infrastructural Scarcity (HRIS). Consequently, indicators of empowerment for rural women farmers should be anchored on availability and access to land, gender-friendly modern farming technologies and rural infrastructure. These are interrelated factors that should be tackled together to be able to achieve the requisite empowerment of rural women farmers for increased food production. Ownership of land is, no doubt, necessary because it may lead to change in the type of crop produced, but it is not equal to increased food production. In the same vein, if the infrastructure in the rural setting such as road, electricity and credit facilities are grossly inadequate, access to land and modern farm technologies may be completely affected as the farmers may not generate the expected increase in food production.

On the whole, this study has shown that food production by rural women is significantly influenced by the access and ownership of productive inputs. Esan rural women farmers are beginning to lose interest in the occupation of farming as they continue to suffer deprivation of the required productive inputs. This study has highlighted the dire need to boost rural women's access to product inputs for enhanced food production. Rural areas continue to be buffeted by the plagues of illiteracy and poor decision-making capacities. As such, rural women continue to bear the brunt of neglect by the government. Accordingly, this study has revealed that there will be high risk of food insecurity if the plights of rural women are not immediately addressed. The findings in this research present an indictment on the agricultural, rural development, and poverty reduction policies and programmes of the Nigerian government over the past five decades of national Independence. High neglect of rural women farmers in Esan West Local Government Area is evident from this study. This neglect can, therefore, be said to be the factor responsible for the high level of food insecurity in Nigeria.

5.3. Contribution to knowledge

This study is an extension of the body of knowledge in the area of rural sociology, specifically rural women empowerment. Data from this study have helped to provide an understanding of the future of food security in Nigeria and globally with respect to access and ownership of productive inputs by rural women farmers. The major contributions of this study to knowledge are as follows:

1. Having employed a combination of research methods, this study has shown vividly that Esan rural women farmers are highly disempowered in their food production endeavor.

2. The study has helped to situate the concept of women farmer's empowerment with data from the study area by revealing that women farmers can increase their yield by 33 per cent if they have access to farm productive resources, namely: advanced farm technologies and credit facilities.

3. The findings of this study have helped to consolidate the application of the gender and development theory in the explanation of women empowerment by showing that the inclusion of men's concerns is vital for the success of women empowerment efforts.

4. This study has demonstrated that there is a strong influence of patriarchy among the people of Esan West Local Government Area of Edo State.

5. Also, this study has shown that there is high rural infrastructural scarcity in the study area thereby limiting the capacity of rural women farmers to contribute to food security.

6. Finally, this study has showed that dysfunctional institutions, stimulated by failed policies, are at the root of the constraints faced by rural women farmers.

5.4. Recommendations for policy and practice

1. Comprehensive and intensive agricultural trainings should be organized for rural women farmers. This step is vital because no matter the sophistication of farming transformation programmes instituted by the government or any multilateral

agency, if the farmers are not aware or enlightened on those provisions, they cannot benefit from them. As such the expected positive impact of those programmes on food production cannot be achieved.

2. Empowerment target has to be very specific to a particular group in order to avoid the inequality that exists within a large group of people. For instance, empowerment strategies targeted at rural women may be biased against the category of rural women who are farmers thereby denying that group of women the needed support as well as obstructing the expected benefits derivable to the nation from their empowerment.

3. Empowerment has to be understood as evidential rather than budgetary, as such proper allocation of resources is inevitable. This implies that no matter the amount of resources deployed by the institution of empowerment, if the targeted group has not experienced the expected support, then empowerment cannot be said to have occurred. As such, it is recommended that empowerment strategies for rural women farmers be effectively monitored towards goal attainment. In empowering rural women farmers for food production, every aspect of food production must be considered and proper resources allocated to each. These aspects should include four aspects: (i) Land availability; (ii) Land preparation; (iii) cultivation – planting and weeding; (iv) harvesting; and (iv) post-harvest –processing, storage, and marketing. The case of storage facilities must be given utmost priority as a result of the lingering enormous post-harvest losses recorded by rural women farmers. In addition, modern farming techniques, such as improved fertilizers, should be massively deployed for cultivation.

4. Adoption of renewable energy is vital. The health of rural women farmers should be adequately tackled as they are continuously exposed to indoor air pollution through the use of wood and coal for food processing. This can be tackled by the adoption of renewable sources of energy such as solar energy knowing that Nigeria is abundantly endowed with the natural supply of the sun. This should be achieved with government's collaboration with Non-Governmental Organizations as well as multi-lateral companies.

5. Revisiting the Local Government autonomy bill is necessary. Local government autonomy should be seriously pursued to become law with the hope that it will enhance rural development and boost agricultural productivity. It is expected that direct allocation from the Federal Government to the Local Government will enable grassroots developmental projects, including agriculture.

6. Access to credit facilities should be made through the availability of the facilities and public awareness in the localities. This should include removal of the stress associated with the demand for collateral. A special functional bank, such as an Agricultural Bank, should be instituted for rural women farmers taking cognizance of the low level of education among them.

7. Provision of good roads is expedient if access to farmlands is to be enhanced and if post-harvest loss is to be tackled.

8. Demonstration sites should be established for extension agents in the Local Government for easy access to the women farmers.

9. The issue of patriarchy must be addressed, especially through the collapse of the rule of primogeniture thereby allowing women to have access to inheritance just as their male counterparts. This should extend to land ownership. There should be a law towards granting women access to their husband's properties after his death.

10. Special programmes should be provided for the widows as the population is high (one out three women) in the research area. Such programmes could include scholarship and employment opportunities for their children.

11. Direct intervention for women's needs through the closest women affiliates such as the traditional women leader instead of engaging or involving middlemen/women in the form of political leaders should be instituted. These Intervention programmes must be result and impact-oriented in that they should target those that are regarded as poor - the women, promote gender equality, be human rights-based, allow sustainable graduation out of poverty and enhance long-term resilience. In addition, there should be close monitoring of those programmes.

12. The intrusion and destruction of farm produce caused by nomadic herdsmen must be addressed to preserve the crops cultivated by the women in the research area and avert a potential communal clash between the residents and the nomadic herdsmen.

13. Adequate funding of research regarding rural women to foster more interest in the needed research for data regarding rural women should be promoted by all stakeholders.

14. Community farms should also be promoted by government and Non-Government Organizations (NGOs). This will make farming a collective task rather than abandoning it to a vulnerable few, in this case, rural women.

15. Institutions should establish farms for their staff members. Where this is impracticable for an organization, collaborations can be formed with recognized establishments who have a vision and are succeeding in this regard. The process is expected to take the form of the present Pension Scheme in Nigeria, which is contributory. This will help to reduce the burden of food production on rural women farmers, as farming wears them out physically and mentally. In addition, the women can afford the time to acquire relevant skills on less tedious avenues for wealth creation in order to enhance their contributions to social development. Income received from engaging in non-farm work can then be channeled into their farms to hire farm labour.

5.5. Areas for further research

Data are vital for proper policy formulation and execution. This is particularly true in the attainment of the Nigerian agricultural transformation agenda by Jonathan's administration, African Women's Decade by the African Union and the global food security drive by the United Nations. To this end, there is need to conduct a similar research in other Local Government Areas of the country not covered in this research. This will enable the generation of comprehensive data concerning the empowerment status of rural women in Nigeria. In addition, interdisciplinary and comparative researches are recommended. The presence of rural infrastructural scarcity should be examined in these contexts as well in order to determine the effect of such on the

empowerment rural women farmers. Furthermore, there is also the need to study different effects of access finance and extension services on male and female farmers. Finally, there is need to investigate the cause of the high rate of widowhood among Esan rural women farmers, which was outside the scope of this study.

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APPENDIX I

RURAL WOMEN FARMERS EMPOWERMENT SCALE (RUWFES)

COVENANT UNIVERSITY, OTA, OGUN STATE

Dear respondent,

Good morning/afternoon/evening ma.

I am a postgraduate student in the Department of Sociology, Covenant University. I am conducting a study on **EMPOWERMENT OF RURAL WOMEN FARMERS AND FOOD PRODUCTION IN ESAN WEST LOCAL GOVERNMENT AREA OF EDO STATE, NIGERIA.** I need to ask you some questions to assist me in my research work. Please answer the questions below with all honesty and patience. All information will be used strictly for academic purposes and will be held in utmost confidentiality.

Thank you.

Mrs. M. I. Ozoya

SECTION A: Socio-demographic data

Name of community: ……

1. What is your age?……...……..
2. What is your marital status? (a) Single (b) Married (c) Separated (d) Divorced (e) Widowed
3. How many children have you ever born?..…….....
4. How many children do you now have? …….....
5. What is your level of education? (a) No formal Education (b) Primary (c) Secondary (d) Tertiary (e) Other (Please specify)…….....
6. What is your religion? (a) Christianity (b) Islam (c) Traditional religion (d) Other (Please specify) …….....
7. What is your husband's level of education? (a) No formal Education (b) Primary (c) Secondary (d) Tertiary (e) Other (Please specify)…….....
8. What is your husband's religion? (a) Christianity (b) Islam (c) Traditional religion (d) Other (Please specify) …….....
9. How many wives does your husband have? .....….

10. If more than one wife, what position are you? ……..

11. What is your husband's main work? (a) Farming (b) Civil Servant (c) Artisan (d) Other (Please specify) ……

12. If he is a farmer, what type of crop does he cultivate most? (a) Cocoa (b) Rubber (c) Yam (d) Rice (e) Pineapple (f) Other (Please Specify) ……

SECTION B: Ownership of land, type of crops and extent of food production

13. Do you have any piece of land of your own? (a) Yes (b) No

14. If no, why not? (a) Women do not own land here (b) No money to buy (c) I do not need to own any land (d) Other (Please specify) ……

15. If yes, how did you acquire it? (a) Husband (b) Inherited (c) Personal purchase (d) Hire (e) Other (Please specify) ……

16. If yes, what size is it? (a) Less than one plot (b) One plot (c) Two plots (d) Other (Please specify) ……..…

17. How do you always get the land you use for farming? (a) Husband (b) Inheritance (c) Personal purchase (d) Hire (e) Other (Please specify) ……..

18. What is the size of your farmland? (a) Less than one plot (b) One plot (c) Two plots (d) Other (Please specify) …….…….

19. Which crop do you cultivate most? (a) Cassava (b) Maize/Corn (c) Yam (d) Groundnut (e) Other (Please specify)……...

20. Is it because of the size of farmland you have now that makes you to cultivate the type of crops you plant? (a) Yes (b) No

21. If you had a bigger size of land, would you have cultivated crops different from the ones you presently plant? (a) Yes (b) No

22. If yes, which crop would you have loved to cultivate most? (a) Banana (b) Plantain (c) Pineapple (d) Yam (e) Rice (f) Other (Please specify) ……

23. Is it because of the way you get the land you use for farming (the source of farmland) that makes you cultivate the type of crops you always plant? (a) Yes (b) No

24. If you were the owner of the land you use for farming, would you have cultivated crops different from the ones you presently plant? (a) Yes (b) No

25. If no, why not? (a) Farm work is too difficult (b) Those are the main crops women plant here (c) They are easy to cultivate (d) Other (Please specify)
……

26. If yes, which crop would you have loved to cultivate most? (a) Banana (b) Plantain (c) Pineapple (d) Yam (e) Rice (f) Other (Please specify) ……

SECTION C: Availability and access to advanced farming technologies

27. Do you have access to any modern farming equipment? (a) Yes (b) No

28. I am going to mention some modern farming equipment. Please tell me whether you know them, have them, have used them, have been trained to use them and whether you are still using them.

S/N	Equipment	Known		Have		Used		Trained to Use		Still using	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	Cassava uprooter										
2	Cassava peeler										
3	Cassava washing machine										
4	Cassava chipping machine										
5	Pumping machine										
6	Palm oil extractor										
7	Other ……										

29. Has your food production increased since you started using them/it?
(a) Yes (b) No

30. If yes, to what extent? (a) Less than double (b) Double (c) More than double (d) Other (Please specify) ……..……

31. Tell me your main source of labour for each of the farming tasks I am going to mention now:

		Main source of labour					
S/N	Type of Task	Husband	Self	Children	Other family Members	Hired Labour	Not part of farm tasks
1	**Land clearing**						
2	**Ridge making**						
3	**Planting**						
4	**Fertilizer application**						
5	**Weeding**						
6	**Harvesting**						
7	**Storage**						
8	**Processing**						
9	**Marketing/Distribution**						
10	**Other …….**						

32. Do you have access to any modern farming techniques? (a) Yes (b) No

33. I am going to mention some modern farming techniques. Please tell me whether you know them, have them, have used them, have been trained to use them, and whether you are still using them.

S/N	Technique	Known		Have		Used		Trained to Use		Still using	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1	**Improved seedlings**										
2	**Improved cassava cuttings**										
3	**Pesticides**										
4	**Fertilizers**										
5	**Other ……..**										

34. Has your food production increased since you started using the above modern farming techniques? (a) Yes (b) No

35. If yes, to what extent? (a) Less than double (b) Double (c) More than double (d) Other (Please specify)……

SECTION D: Availability and access to agricultural extension services and farmers' education

36. Have you attended any training organized by extension service agents?
    (a) Yes (b) No

37. If no, why not? (a) None organized in the community (b) Financial constraint (c) Not invited for any one (d) Other (Please specify) …….……

38. If yes, where? (a) In the community (b) In the LGA (c) Outside the LGA (d) Other (Please specify) ……..

39. When? (a) Less than a year ago (b) A year ago (c) More than one year ago (d) Two years (e) Other (Please specify) ……

40. What were you taught? (a) How to plant (b) How to use chemicals (c) Better methods to store crops (d) Other (Please specify)……

41. Does the training hold often? (a) Yes (b) No

42. Has the training increased your crop production in any way?

    (a) Yes (b) No

43. If yes, to what extent? (a) Less than double (b) Double (c) More than double (d) Other (Please specify) ...……

SECTION E: Access to credit facilities

44. Do you spend money in your farming activities? (a) Yes (b) No

45. What is your main source of income for farming (a) Self (b) Husband (c) Other (please specify) ……

46. Have you ever taken any loan from any institution for farming? (a) Yes (b) No

47. If no, why not? (a) High interest rate (b) Fear of inability to repay (c) Bank's demand for collateral (d) Husband's refusal (e) Other (Please specify) ……

48. If yes, which institution(s)? (a) LAPO (b) Microfinance bank (c) First Bank (d) UBA (e) Ecobank (f) Other (Please specify) ……

49. When did you access the loan? (a) Less than a year ago (b) A year ago (c) More than one year ago (d) Two years (e) Other (Please specify) ……

50. Who took the decision on how to use the loan? (a) Self (b) Husband (c) Other (Please specify) ……

51. Did the loan increase the quantity of food you produce ever since?
    (a) Yes (b) No

52. If yes, to what extent? (a) Less than double (b) Double (c) More than double
    (d) Other (Please specify) ……..……

53. What are your suggestions on how to help rural women in their farm work?
    ……

    ……

    ……

APPENDIX II

IN-DEPTH INTERVIEW GUIDE

Dear respondent,

I am a postgraduate student in the department of Sociology, Covenant University. I am conducting a study on **EMPOWERMENT OF RURAL WOMEN FARMERS AND FOOD PRODUCTION IN ESAN WEST LOCAL GOVERNMENT AREA OF EDO STATE, NIGERIA.** I need to ask you some questions to assist me in my research work. Please answer the questions with all honesty and patience. All information will be used strictly for academic purposes and will be held in utmost confidentiality.

The aim of this session of interview is to ascertain why women in the study area continue to experience little or no ownership of agricultural inputs, even though they are mostly farmers. Emphasis shall be on the influence of the customs and traditions in the study area. Kindly permit us to use some recording machines in order for easy retrieval of the conversation afterwards.

Thank you.

1. Do women own land in this place?
2. If no, why not?
3. Is there any stipulation in your customs and traditions that women should not own or inherit land from her husband or father?
4. Why are most women not educated?
5. Why are periodic trainings not organized for the women in order to enhance their farming abilities?
6. Why have women continued to process and store food produce with the same method over the years?
7. Are there plans in this community towards improving the techniques?
8. Are women permitted to have more money than their husbands?
9. If no, could that be the reason women are not allowed to be involved in activities that will yield them much income such as cooperatives and banks?
10. Is it possible to make wives inherit their husbands' properties after their death?

APPENDIX III

FOCUS GROUP DISCUSSION GUIDE

The discussions centered on the women's socio-economic characteristics, farming activities, crop production and their constraints.

1. Factors (cultural and otherwise) surrounding the women's access to:
   a. Land
   b. Technologies
   c. Extension services
   d. Credit facilities

2. Factors limiting their farming occupation

3. Questions on the interventions of government – Local, State and Federal and Non-Government Organizations (NGOs).

APPENDIX IV

A typical pumping machine found in EWLGA of Edo State, Nigeria

Source: Researcher 2016

APPENDIX V

A Palm Oil Extracting Machine found in EWLGA of Edo State, Nigeria

APPENDIX VI

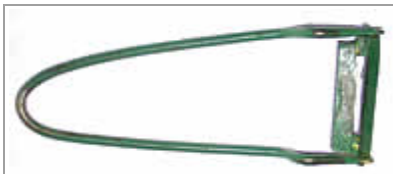
NCAM CASSAVA LIFTER

Features	Designed for uprooting cassava. Consists of a frame to which a footboard and immovable griping jaws are attached, a lever (handle) which is hinged to the frame.	
Capacity	200 plants/man-hour	
Cost	N7500 (US$56.16)	
Contact	National Centre for Agricultural Mechanization (NCAM), KM. 20, Ilorin-Lokoja Highway, Idofian, PMB 1525, Ilorin, Nigeria	
Telephone	031-224831, 224836	
Email	ncam@skannet.com	

Source: http://www.cassavabiz.org/postharvest/3a_phequip.htm ACCESSED 2014

APPENDIX VII

NCAM PEELING TOOL

Features	High quality peeling blade and handle made of mild steel	
Capacity	35kg/hr	
Cost	N2600 (US$19.47)	
Contact	National Centre for Agricultural Mechanization (NCAM)	
Address	KM. 20, Ilorin-Lokoja Highway, Idofian, PMB 1525, Ilorin, Nigeria	
Telephone	031-224831, 224836	
Email	ncam@skannet.com	

Source: http://www.cassavabiz.org/postharvest/3a_phequip.htm ACCESSED 2014

Appendix VIII

IITA PEELING TOOL

Application Potential	Peeling Cassava	
Capacity	Up to 30 kg/hour depending on experience	
Advantage	Simple, can be fabricated locally, Uniform peeling, Minimum peeling loss, Easy grip providing maximum safety, varying sizes of cassava	
Repair and Maintenance	Washing and drying after use	
Contact	IITA & FOODNET (Detailed drawings)	
Address	**International** c/o Lambourn (UK) Ltd, Carolyn House, 26 Dingwall Road, Croydon, CR9, 3EE, UK **Uganda** IITA Eastern and Southern African Regional Centre, 7878, Kampala, Uganda	
Telephone	00256-41-223460	
Fax	00256-41-220217	
Email	foodnet@imul.com	

Source: http://www.cassavabiz.org/postharvest/3a_phequip.htm ACCESSED 2014

APPENDIX IX

PRODA PEELER

Capacity	25kg/min Power: 5HP	
Price	US$6364.66 (N850,000)	
Contact	Projects Development Institute (PRODA) Ekulu Workshop, PMB 01609 Enugu	
Telephone	042 451593 or 457691	
Email	info@prodaenugu.ng	

Source: http://www.cassavabiz.org/postharvest/3a_phequip.htm ACCESSED 2014

APPENDIX X

2-ACTION ZONE PEELER

Capacity	135kg/hr	
Contact	Prof. E. U. Odigboh, Department of Agric Engineering, University of Nigeria, Nsukka.	
Telephone	042-771911 (417)	
Fax	042-770644; 771500	
Mobile	08043180686	

Source: http://www.cassavabiz.org/postharvest/3a_phequip.htm ACCESSED 2014

APPENDIX XI

CASSAVA WASHING MACHINE

Capacity	1 t/hr	
Contact	S. Adiss	
Address	KM 10, Ibadan/Iwo Road, Oganla village, near UTB, Olodo, Box 9069, UI. PO Ibadan	
Telephone	02-8103727, 08023504754, 08034102920	

http://www.cassavabiz.org/postharvest/3a_phequip.htm ACCESSED 2014

APPENDIX XII

An operator standing beside an old cassava grating machine

APPENDIX XIII

Some teenagers available to help their mother out with cassava processing

APPENDIX XIV

Table showing respondent's main source of labour for different farm tasks

Selected variable	NO	%	Selected variable	NO	%
Land preparation			**Weeding**		
Husband	7	1.5	Husband	15	3.3
Self	23	5.0	Self	164	35.9
Children	10	2.2	Children	11	2.4
Hired labour	417	91.2	Hired labour	267	58.4
Total	457	100.0	Total	457	100.0
Ridge making			**Harvesting**		
Husband	7	1.5	Husband	8	1.8
Self	30	6.6	Self	221	48.4
Children	9	2.0	Children	9	2.0
Hired labour	411	89.9	Hired labour	219	47.9
Total	457	100.0	Total	457	100.0
Planting			**Processing**		
Husband	3	0.7	Husband	3	0.7
Self	84	18.4	Self	431	94.3
Children	20	4.4	Children	3	0.7
Hired labour	350	76.6	Hired labour	20	4.4
Total	457	100.0	Total	457	100.0
Fertilizer application			**Storage**		
Husband	1	0.2	Husband	1	0.2
Self	7	1.5	Self	454	99.3
Children	1	0.2	Children	2	.4
Hired labour	4	0.9	Total	457	100.0
Not part of tasks	444	97.2	**Marketing**		
Total	457	100.0	Self	438	95.8
			Children	7	1.5
			Hired labour	12	2.6
			Total	457	100.0

Source: Field survey, 2014