TITLE PAGE

ASSESSMENT OF AGRICULTURAL EDUCATION NEEDS OF WOMEN FOR CROP AGRIBUSINESS IN EDO STATE: IMPLICATIONS FOR POVERTY REDUCTION

BY

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A DISSERTATION SUBMITTED TO THE DEPARTMENT OF VOCATIONAL EDUCATION, FACULTY OF EDUCATION IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF EDUCATION (M.Ed.) DEGREE IN AGRICULTURAL EDUCATION OF DELTA STATE UNIVERSITY,
ABRAKA.

DECLARATION

I declare that this is an original research carried out by me in the Department of Vocational Education.

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CERTIFICATION

ONYEKWULUJE Chinwe Ozobialu a Post Graduate student in the Department of Vocational Education (Agricultural Science Unit) with Matriculation number PG/12/13/214590 has satisfactorily met the requirements for the coursework and research for the award of Degree of Masters of Education (M.Ed.) Agricultural Science Education. We vouch for the originality of this research work and that it has not been submitted in part or full, for any other degree or diploma of this or any other University.

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APPROVAL

This dissertation has been approved in the Department of Vocational Education (Agricultural Science Education unit) Delta state University, Abraka.

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DEDICATION

My awesome God

&

Our Lady of perpetual help.

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Abstract

This study sought to access the Agricultural Education needs of women in Edo state for crop agribusiness and it's implication for poverty reduction. Women, though responsible for half of the world's food production have continually had low productivity levels in their crop agribusinesses resulting in very low living standards hence the need for this study. Five research questions and four hypotheses were raised to guide the study. Shanteaus theory of expert competence which emphasizes five factors(domain knowledge, psychological traits, cognitive skills, decision strategies and task characteristics) which impact the skills and abilities of experts was the theoretical frame work on which this study was hinged. The study utilized the descriptive survey research design. Seven hundred and eighty three women were sampled from a population of two thousand, three hundred and forty nine registered women engaged in crop agribusiness in Edo State using the proportionate stratified random sampling technique and applying the Yaro Yamane formula. Three questionnaires served as the instrument for collecting data with reliability index of 0.87, 0.80 and 0.75 respectively using the cronbach alpha formula. Means, percentages, the borich model, gross margin analysis, analysis of variance and multiple regression were used in the analysis of data. The study found that most of the rural women involved in crop agribusiness in Edo state have a poor basic educational back ground which limits their ability to seek information that will enhance their agribusiness. The study also found that most of the crop agribusinesses engaged in revolved about the Cassava crop to the detriment of other crops with equally good economic potential. Average return on investment on the different crop agribusinesses was N15, 000/month for production and processing and N45, 000/month for marketing, an indication of the reason the women still remain poor. This justifies the need for education that will improve the productivity levels of the women, thus translating to reduced poverty levels. The study also found sourcing funds for the crop agribusinesses to be a major need of the women and also a lack of capital and storage facilities as major barriers to the efficient use of Agricultural resources for profitable crop agribusinesses. Test of hypothesis showed significant difference in the average returns in the production, processing and marketing crop agribusinesses and also in the barriers faced by the women in their crop agribusinesses. The mean responses of the women in the various sectors of crop agribusiness on their educational needs were also different at 5% level of significance. It was therefore recommended that Agricultural training be organized for the women focusing on their computed educational needs and such training be structured such that differences in learning styles, educational needs, economic status, religion, and farming backgrounds, among other characteristics be taken in to consideration and that there should be a collaboration between extension personnel and successful women and professionals in the field of agribusiness to bring about new approaches for programming to women farmers.

CHAPTER ONE

INTRODUCTION

Background to the Study

Agriculture has a great role to play in reducing poverty. Some 2.5 billion people in developing countries depend on agriculture for their livelihoods but beyond its direct benefit to rural livelihoods, the agricultural sector has particularly strong links to the rest of the economy, and this is one of the most powerful ways in which it generates overall growth and reduces poverty. As agriculture grows, overall economic growth reduces rural and urban poverty faster (Department for International Development [DFID], 2005). Strong agricultural growth, particularly increased productivity, has been a feature of countries that have successfully reduced poverty. Gallup, Radelet and Warner (1997) reported that every 1% increase in per capita agricultural output led to a 1.61% increase in the incomes of the poorest 20% of the population and Thirtle, Lin and Piesse (2001) concluded from a major cross-country analysis that, on the average, every 1% increase in agricultural yields reduced the number of people living on less than US$1 a day by 0.83%.These are proof that agricultural growth is highly effective in reducing poverty. Anyanwuocha (as cited in Asaju, Arome&Anyio , 2014) also identified human capital development and agriculture as veritable tools for the attainment of food security, employment generation, wealth creation and rural transformation agenda for any society.

The World Bank (1996a) defined poverty as a lack of command over the basic needs of the people. The inability of the rural population to meet their basic needs of life which include quality housing, clothing, balanced diet, education, electricity supply, water and involvement in political activities that decides the condition of the people amount to rural poverty. Dealing with Poverty reduction involves numerous measures, policies and strategies aimed at ameliorating the state of being poor. It is focused on the identification and

deductions from available information or the process of finding out from the information that is available, mechanisms for the provision of the basic needs of members of the society (Rundells, 2005). Rural women play a key role in supporting their households and communities in achieving food and nutrition security, generating income and improving rural livelihoods and overall well-being. Millions of women also work as farmers, farm workers and natural resource managers (Onyemobi, 2000).According to estimates by the Food and Agricultural Organization [FAO] (2013), women represent more than half of the labour required to produce the food consumed in developing countries. In sub-Saharan Africa, the figure is higher reaching three-quarters of the total labour force. More specifically, African women perform most of the work related to some agricultural tasks e.g. hoeing, weeding, storage operations and processing. In doing so, they contribute to national agricultural output, maintenance of the environment and family food security (Brown, Feldstein, Haadad, Pena and Quisumbing2001). In Nigeria, the involvement of women in agriculture has attracted greater attention in recent years because of the recognition that women play very significant roles in agricultural production, processing and utilization. Nnadozie and Ibe (as cited in Odurukwe, Matthews-Njoku and Ejiogu-Okereke,2006).

The proportion of women working in Agriculture in comparison with other sectors is usually equal to or higher than the male equivalent despite women's lower overall employment rates among employed women. South Asia for instance and Sub-Saharan Africa has almost 70 and 60 percent of its employed women working in the Agricultural sector respectively (FAO, 2012).The substantial involvement of rural women in agriculture, primarily as unpaid or contributing family workers, highlights the importance of developing policies and programmes that address the needs, interests and constraints of women as well as men in the agriculture sector. This includes revamping and strengthening extension systems to be more responsive to and inclusive of women, addressing structural barriers to women's

access to productive resources, and improving financial systems to respond to the needs of rural women producers and entrepreneurs, including moving out of the less productive segments of the rural economy (UN women's watch 2012). Women make up about 43 percent of the agricultural labour force in developing countries on the average (UN women's watch, 2012). Evidence indicates that if these women had the same access to productive resources as men, they could increase yields on their farms by 20 to 30 percent, raising total agricultural output in developing countries by 2.5 to 4 percent, in turn reducing the number of hungry people in the world by 12 to 17 percent (Department of state USA, 2011). Land is perhaps the most important household asset to support production and provide for food, nutrition and income security for rural women and men yet an international comparison of agricultural census data shows that due to a range of legal and cultural constraints in land inheritance, ownership and use, less than 20 percent of landholders are women representing fewer than 5 percent of all agricultural land holders in North Africa and West Asia and across Sub-Saharan Africa, averaging 15 percent of agricultural land holders. Given the importance of women as agricultural producers, initiatives aimed at increasing agricultural productivity need to reduce differential access to and control of resources by women and support women's effective participation in decision-making processes (UN women's watch, 2012).

Agribusiness involves business expansion in the agriculture and rural sector and its chains, from relationships involving contracting structures, alliances and associations mainly carried out by the private sector, by producers of the agriculture sector that are sustainable in the long term. In addition to a joint association of farmers, it involves various exogenous agents and agro-industrial chains, and may or may not include the support of public policies (FAO, 2014a). According to Phipps, Osborne, Dyer and Ball (2008), Agricultural Education is a systematic instruction in Agriculture and natural resources at the elementary, middle school, secondary, post-secondary or adult levels for the purpose of:

- preparing people for entry and advancement in Agricultural occupations and professions ;
- job creation and entrepreneurship and
- Agricultural literacy.

Agricultural Education might have succeeded in attaining all three objectives listed above but appears not to have enhanced agribusiness nor reduced poverty in Edo state. Women appear to bear the brunt more. They engage in an array of agricultural activities and attain certain levels of agricultural literacy and yet remain poor. It would seem there are particular needs/skills lacking in the agricultural education possessed by these women which if present could enhance profitable and sustainable agribusiness which could translate to a reduction in poverty.

Edo state has a population of approximately 3.5 million people and is one of the nine oil-producing states of the Federal republic of Nigeria though accounting for less than 2 percent of total oil production. It is one of the poor states in the southern half of the country. Agriculture is the mainstay of the economy. Benin City is the capital and largest urban centre. The population living in poverty is estimated at 44.3 percent compared to the national average of 51.6 percent and a regional average of 38.3 percent in the south (World Bank, 2012c). It has an unemployment rate of 22.1 percent, compared to a national average of 15.3 percent and 12.8 percent for the southern region. Youth unemployment is even higher, at 36.4 percent, compared to the national average of 23.9 percent and 22.4 percent in the south (World Bank, 2012c). High poverty levels, youth unemployment, dilapidated infrastructure, and flooding are the main developmental challenges facing the state.

According to the Edo State women association (2013), Edo women, compared with other Nigerian women are poor and more vulnerable to external shocks and earn less than half the income of men. This is reflected in constraints to access to economic resources, such

as land and credit, discriminatory practices in land ownership and inheritance, as well as other resources such as social resources: legal frameworks and protection, education, health services, among others. The combined result is that women and girls are at a higher risk of poverty and face greater difficulties in overcoming it or enabling their families to move out of poverty.

Statement of the Problem

Women are responsible for half of the world's food production and between 60 and 80 percent of the food in most developing countries. They account for 70% of agricultural workers and 80% of food producers (Ajani, 2009).Not only are women the mainstay of the agricultural food sector, labour force and food systems, they are also largely responsible for post-harvest activities. Their specialized knowledge about genetic resources also makes them essential custodians of biodiversity for food and agriculture. Despite the significance of women's role in agricultural development, evidence throughout developing countries shows that women's farming productivity and efficiency levels often remain very low (FAO,2013). Women's fundamental contribution is continually under-appreciated and under-supported and is often adversely affected by prevailing economic policies and other development conditions giving rise to a scenario of women working so hard most of their lives in agricultural related pursuits with insignificant results. There is no improvement in their standard of living neither are they able to access basic luxuries of life and better healthcare. These circumstances must be reversed to achieve sustainable rural development through Agriculture as it plays a major role in generating incomes and employment in rural areas and consequently reducing poverty. It was on this premise that the study attempted to find out the basic Agricultural Education needs of these women to make their agricultural endeavors specifically, crop agribusinesses profitable, worthwhile and a means of improving the standard of living of the average woman

on relevant indices (better nutrition, access to health care and finance) and significant reduction of poverty in the long run.

Research Questions

The following research questions were raised to guide the study:

i. What specific aspects of Agricultural education would enhance the agricultural productivity of rural women in crop production, processing and marketing agribusinesses in Edo state?

ii. What are the socio economic characteristics of the rural women involved in crop agribusiness in Edo state?

iii. What various crop agribusinesses are undertaken by rural women in Edo state?

iv. What is the average return on the various crop agribusinesses undertaken by women in Edo state?

v. What are the barriers militating against efficient use of Agricultural resources by rural women in Edo State for profitable crop Agribusinesses?

Purpose of the Study

The general purpose of the study was to assess the agricultural education needs of women for crop agribusiness and its implications for poverty reduction. The study therefore specifically sought to:

i. determine the Agricultural Education needs of women for maximal productivity in their crop production, processing and marketing agribusinesses in Edo State.

ii. ascertain the socioeconomic characteristics of the rural women in Edo State.

iii. identify the various crop agribusinesses undertaken by rural women in Edo State.

iv. estimate average returns on the various crop agribusinesses undertaken by Edo State women.

v. establish existing barriers to efficient use of agricultural resources for profitable crop agribusinesses by rural women in Edo State.

Hypotheses

The following hypotheses were formulated to guide the study.

Ho 1: There is no significant difference in the average returns of the rural women involved in the different sectors of crop agribusiness in Edo State.

Ho 2: Significant difference does not exist in the barriers faced by women in the different sectors of crop agribusiness.

Ho 3: There is no significant relationship between the socioeconomic characteristics of the women and their computed agricultural education needs.

Ho 4: The mean responses in the agricultural education needs of the rural women involved in processing, production and marketing agribusinesses are not significantly different.

Significance of the Study

This study would be of immense benefit to extension agents, teachers and students of Agricultural education. It will enable these groups to refocus on learning needs of Adults relevant to the present situation in the country. The study would generate new methods of teaching that will correspond to what is practicable outside the classroom.

Findings from this study would also be useful to Agricultural cooperatives; women group leader's and market women. The study would provide information to these groups about the challenges their members face and the reason why their agricultural ventures are not as profitable as they should be thus stimulating further deliberations on the best ways of adopting new innovations that would make their agricultural ventures competitive, sought after and assume greater relevance in global agricultural trade.

The ministry for women affairs, non-governmental organizations concerned with rural women empowerment, women in agriculture and policy makers would find this research

relevant in providing baseline information on profitable agricultural practices. This would further streamline their activities to providing services that are relevant for improving the standard of living of rural women.

The recommendations arising from this study would have great implications for poverty reduction in the study area. The study could be replicated in other states, and trainings based on the computed needs of the women would lead to improved Agricultural productivity and most certainly, a reduction in poverty rates across the country.

The findings of this study will also stimulate further research on the topic and revolutionize crop agribusiness in the study area. It is also hoped that this study will bring about changes in the curriculum of Agricultural Education at the different levels of learning that will prepare beneficiaries of such education for the challenge of making a success of Agricultural business in this twenty first century and also make institutions concerned with dissemination of agricultural information aware of their responsibilities to rural women involved in agribusiness in the study area**.**

Delimitation

This study was delimited to the assessment of Agricultural Education needs of rural women for Crop Agribusiness and its implications for poverty reduction in Edo state.

Definition of Terms

Crop Agribusiness: The sum total of all the operations involved in the manufacture and distribution of supplies, production operations on the farm and activities from processing to distribution of crop based commodities and items.

Limitation of the study

The challenge of accessing accurate records of registered women engaged in crop agribusiness in Edo State was the major limitation of this study. The researcher worked with available records from the Edo state agricultural development programme and the ministries of agriculture and commerce and industry.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter was devoted to the review of relevant and selected literature and in doing so; the reviewed literature is discussed under the following sub headings.

- Theoretical framework for needs assessment
- Concept of need
- Concept of poverty reduction
- Profitable Agribusiness
- Women in Agriculture
- Challenges of women in Agriculture
- Rural Economy in Edo State
- Value chain creation in Agriculture
- The National policy on Education (Adult Education)
- Agricultural innovations
- Review of related empirical studies
- Summary of literature reviewed

Theoretical Framework

Needs assessment, broadly defined, is a systematic process for establishing priorities and making decisions regarding programme planning, development, and operations. Needs assessment is used to determine if gaps exist between "what is" and "what should be" and then determining the priority of these needs (Kaufman, 1982).Gaps, either as opportunities or problems, are common instigators of action. Gaps lead to projects or programs, thereby steering individuals to change the status quo. They highlight often in concrete terms, issues that would otherwise be obscured. Gaps also challenge us to find ways to improve personal

and institutional performance (Watkins, Meiers & Visser, 2012). Needs assessment is also a process for figuring out how to close a learning or performance gap. It involves determining what the important needs are and how to address them. The process includes comparing the current condition to the desired condition, defining the problem or problems, understanding the behaviors and mechanisms that contribute to the current condition, determining if and how specific behaviors and mechanisms can be changed to produce the desired condition, developing solution strategies and building support for action (Sleezer et al, 2014).Monette (1979) also defined needs assessment as a process of generating empirical and social information that is necessary for the allocation of scarce resources for program development.

In the United States, needs assessment first emerged with the passage of the Administrative Procedures Act in 1946 (Summers, 1987). In the 1960s and 1970s, more than 30 of the 54 largest pieces of health and human services legislation mandated federal, state, or local needs assessment (Zangwill, 1977). Since then, there has been an increasing emphasis on involving citizens in the planning, conducting, and evaluating of programmes such as extension. On the international scene, an increasing emphasis has been placed on citizen involvement through bottom-up and grass-roots programme planning and development. This is in stark contrast to earlier times when needs were determined by outside consultants and programmes were then developed in response to these needs(Swanson, Bentz & Sofranko, 1998) According to Uko (1985) ,the importance of needs assessment in contemporary society cannot be overemphasized. There are various reasons which have contributed to the growing importance of needs assessment in our society and these are not limited to demands for accountabi1ity, the presence of a vast array of unsolved problems, the need for efficient uti1ization of scarce resources, and the crucial role of needs assessment as the nucleus of the planning process for farm programs. According to Herbert (as cited in Uko,1985), needs assessment as a nucleus of any program provides the basis for determining

objectives, a starting point, a direction, a basis for appraisal and the basis for an authorization to proceed with a particular program or the permission to stop that program.

The focus of a needs assessment could be the results achieved by individuals or groups in an organization, also known as individual team performance (Watkins et al, 2012). This first category of performance may deal with the preparation of reports, the production of equipment, or documenting the distribution of funds to local nonprofit groups. Individual performance may relate to the development of a project plan or the results of mentoring colleagues. In all cases, individual or team performance focuses on the accomplishment of desirable results by the individuals, teams, or working groups. Thus, it incorporates improvements in performance and the achievement of desired results. Needs assessments could also be focused on the results that organizations accomplish and deliver to clients. Organizational performance, the second category of performance, is about the achievement of organizational objectives that lead to beneficial results for the organization, its clients, and its partners. From the delivery of goods or services to the achievement of long-term development objectives, organizational performance is achieved when there is an alignment between what an organization uses does, produces, and delivers. Organizational performance is therefore bound to individual or team performance, thus making their alignment essential to success. The third, and final, category of performance has an important role in every needs assessment i.e. societal performance. Individuals, teams, and organizations do not exist in a vacuum. Therefore, the results they produce are interwoven with the results achieved by the society (from local communities to our shared global society) that they exist within or that they serve (Watkins et al, 2012).

Needs assessment is widely used as a concept; however, as a process it is poorly understood and implemented in educational program development and adult learning (Brachaus, 1984). Needs assessment should not stand alone, but should be followed by

program development so that identified needs can be linked to proposed educational services for potential clients. McWalter, Toner and Corser (as cited in Ghimire& Martin, 2011).

The following theories are explored to guide this study:

1. The adult learning theory first developed by Baker and Trussell (1981) which states that the discrepancy between theory and application can be reduced by determining what is needed by the practitioner (i.e., application).This theory is also supported by Findlay (1992); Duncan, Ricketts, Peake and Uesseler (2006). They state that the gap between theory and practice could be eliminated by reducing theory to what is needed to perfect the practice (teaching).The prospective teacher would then be trained (prepared) to reach competence in several tasks carried out in the teaching profession in order to cope with whatever situation may be encountered in the school.

2. The theory of expert competence proposed by Shanteau (1992) which emphasizes five factors that impact the skills and abilities of experts, i.e. domain knowledge, psychological traits, cognitive skills, decision strategies and task characteristics .

a. An adequate grasp of domain knowledge is obviously a prerequisite for being an expert. This represents not only textbook knowledge, but also insights gained from experience in working on real problems. Based on conversations with experts, their knowledge is generally accessed through stories about past cases. These anecdotal accounts appear to provide both a mnemonic to remember and a convenient way to organize vast amounts of information. As such, they are consistent with efforts to build expert systems through "case-based reasoning (Kolodner, 1984).Although knowledge of the domain is necessary, it is not sufficient for expertise. Many novices know a great deal, maybe even as much as experts. In other respects, however, they lack what it takes to behave as an expert. Having the knowledge needed to perform competently does not ensure that one will indeed perform competently.

b. Shanteau (1992) also argued that experts often display a common set of psychological traits. These reflect what Goffman (1959) describes as "self-presentation" the creation and maintenance of a public image. The traits are part of a decision style found in many experts. These traits include strong self-confidence, excellent communication skills, the ability to adapt to new situations, and a clear sense of responsibility. Experts differ from novices not only in how much information they can recall, but also in how they use the information.

c. To perform competently, one must also have the right cognitive skills and psychological makeup. The cognitive skills referred to by Shanteau (1992) are those generally thought to be God-given and fairly unmalleable (e.g., linguistic, spatial, and mathematic intelligence), or developed through extensive experience (e.g., highly developed attention abilities, a sense of what is relevant, the ability to identify exceptions to the rule, and the capacity to work effectively under stress).

d. The use of a variety of formal and informal decision strategies which help systematize decision making and have the effect of helping experts overcome cognitive limitations. Although many strategies are unique to given domains, there are several that are widely used. They include making use of dynamic feedback, relying on decision aids, decomposing complex decision problems, and pre-thinking solutions to tough situations.

e. The final factor which is crucial, but often overlooked is the characteristics of the task itself. Job tasks will vary from profession to profession and can vary widely within any specific occupation. Some tasks will always require focused attention while others may become fairly automated. The task characteristics determine whether it is possible for experts to behave competently or not. Even with the appropriate knowledge, traits, skills, and strategies, the competence observed in an expert depends on the task. There are some tasks that experts do well at, even in the face of considerable difficulty, e.g.,

weather forecasts. Murphy & Winkler (as cited in Shanteau, 1992). In other tasks, it has been found that even experts can perform poorly especially when the task deals with dynamic stimuli, unpredictable outcomes, and human behavior. In such instances, experts seem incapable of performing much above the level of novices, e.g. clinical psychology.

3. Knowles' theory of Andragogy (Knowles, Holton III, & Swanson, 2005). Knowles' theory posits that adults must know why they must know something, which will likely motivate them to learn. Another component of Knowles' theory is that adults learn experientially, they learn as problem solvers, and learn best when the topic is of immediate value to them. Knowles' stated that adults should be engaged in the planning of their own learning experiences. Malcolm Knowles's theory of the adult learner is built upon Piaget and Erikson's theories. Knowles purposes that the adult learner carries a multitude of life experiences of learning while joining and supplementing the cognitive abilities found in Piaget's adolescent model. An aspect of this theory that Knowles states is that as an individual matures over time, their self-concepts transform from dependency to self – direction. Self -direction is the process through which individuals take the steps necessary to determine their learning needs, to formulate learning goals, distinguish learning resources, select and put learning strategies in to practice and examine learning outcomes (Smith, 2002).

This study was hinged on the second theory as proposed by Shanteau (1992). Successful agri-business involves skill and mastery in agriculture content, pedagogical processes, and other competencies associated with making a success of any endeavor in Agribusiness. According to the theory of expert competence, though the knowledge of domain is essential, it is not sufficient for expertise. Domain knowledge is seen as the task specific knowledge which is extracted from a human problem solver who knows how to solve specific problems in that domain (McFarland & Parker1990). For instance, scholars state that

an “expert chess player is an expert in the realm of chess but is not necessarily an expert when it comes to home repair, income tax preparation, gardening, or nuclear physics” (Galotti 2002). Therefore, the deliberate practice in a particular domain creates preconditions to become a consultant in particular fields. Furthermore, demonstration of psychological traits such as self-presentation in a particular field, i.e. creation and maintenance of public image is seen as a common behavior of the expert. Scholars point out that people who exhibit socially competent skills are preferred in interactions (Knapp & Daly 2002). Hence, social skills embrace communication skills and ability to work with people which is a necessity for success in crop agribusiness.

Particular cognitive skills are also the main aspect distinguishing the expert from the novice. Hence, cognitive skills depend on prior learning and preference. Scholars, analyzing cognition, opine that it includes such processes as distinguishing, combining, tabulating, classifying, and analyzing (Middleman &Wood 1991). Shanteau states that the expert has to display particular cognitive skills i.e. attention abilities, a sense of what is relevant, the ability to identify exceptions to rules, and the capability to work effectively under stress. Middle man and Wood(1991), focusing on the work of social employees, have analyzed such cognitive skills as follows: 1) recognizing feelings, 2) looking for patterns of behavior, 3) drawing inferences, 4) hypothesizing 5) connecting the new to the known, and 6) reflecting on the work . Thus, supporting the fact that women, have to develop empathy, be able to establish patterns of behavior of clients and changes in the market, reflect on their business and make certain inferences and hypothesis in order to succeed in their crop agribusiness. According to Shanteau, experts use various formal and informal decision strategies that help systematize decision making and overcome cognition limitations.

The dynamic feedback, decomposing of complex decision problems and pre thinking solutions to tough situations for instance are seen as the most common decision strategies. On

the other hand, scholars place emphasis on the task characteristics that determine whether it is possible for experts to behave competently or not. The lack of one or more of the factors impacting the skills of experts as posited by Shanteau could explain the low productivity of crop agribusiness in the study area by women who ordinarily appear competent to run such agribusinesses based on their depth of experience in the endeavor, length of time involved in the business and the appearance of possession of know-how to carry out crop agribusinesses. An analysis of the theoretical framework for this study and how it interplays with the variables in the study gives rise to the conceptual model below.

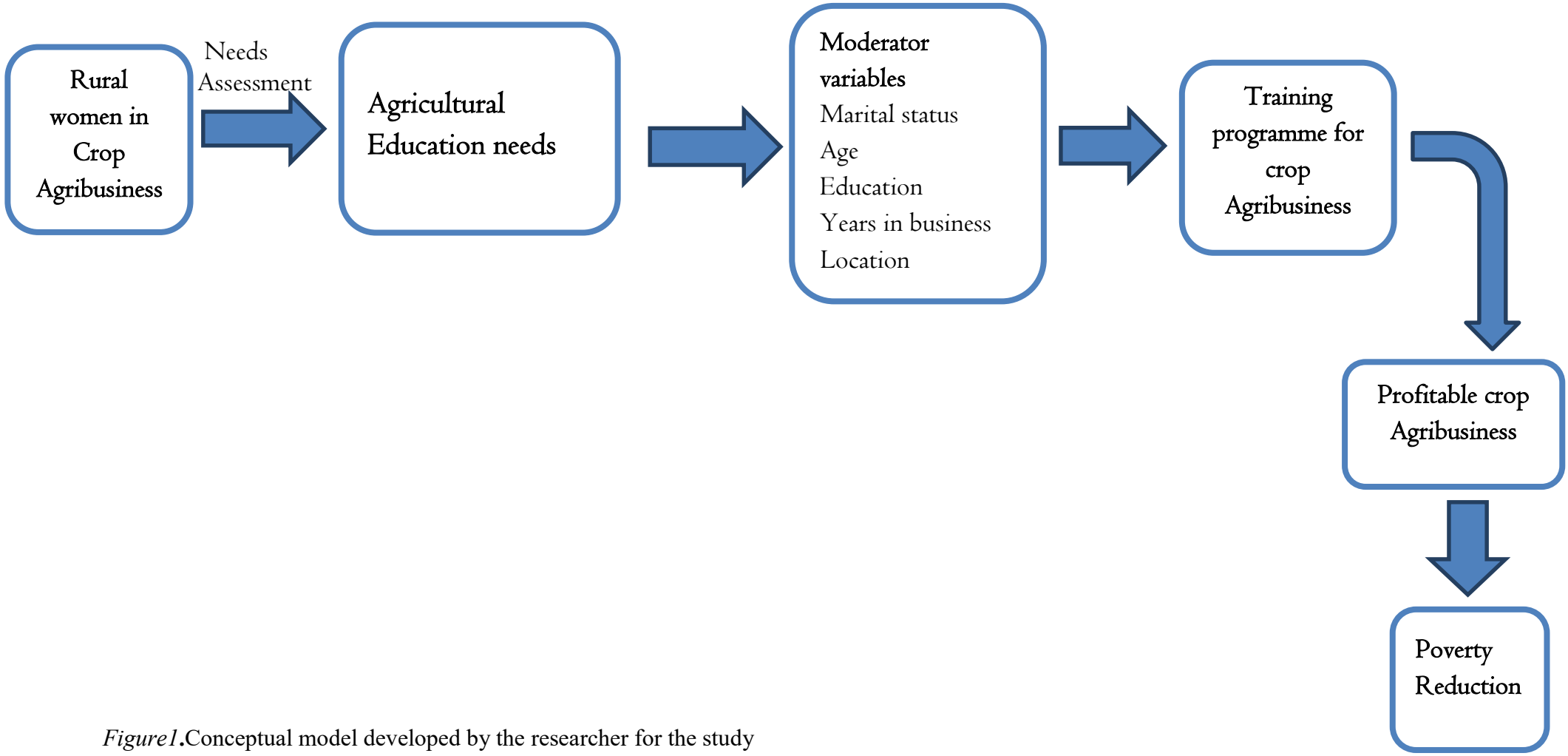

Figure1.Conceptual model developed by the researcher for the study

Concept of Need

Needs are simply the differences between an individual's current achievements and his/her desired accomplishments. Thus, needs most commonly represent discrepancies between the individuals ambitions and the results of his/her current performance (Watkins, West- Meiers & Visser 2012).

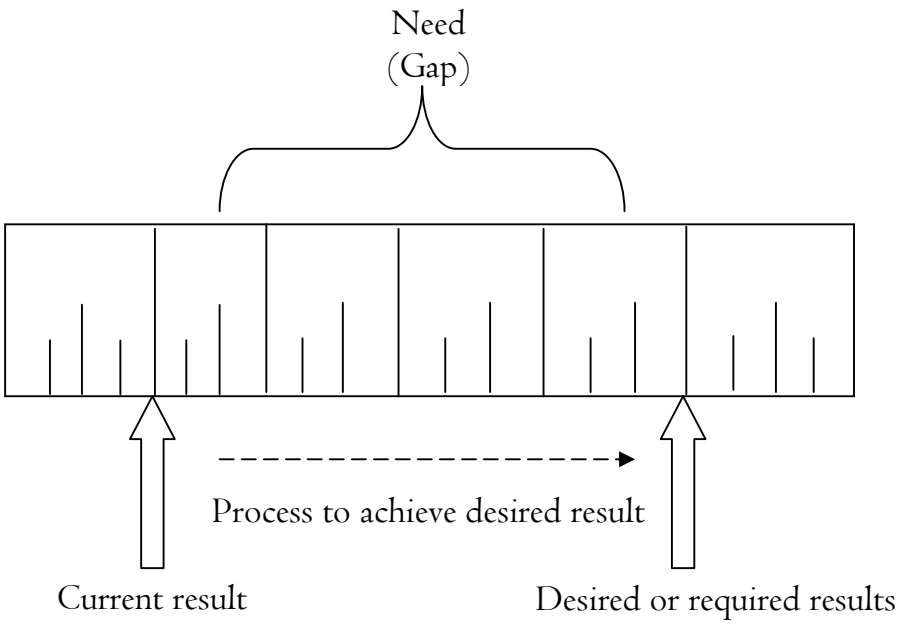

*Figure 2.*Relating Needs to discrepancies between What Is (Current Results) and What Should Be (Desired Results) adopted from Kaufman, Oakley-Brown, Watkins, and Leigh (2003) and Watkins (2007).

Improving performance, as used above is the move from achieving current results to accomplishing desired results. Thus, improving refers to the measured progress from a less-than-desirable state to a desirable state whereas performance refers to the results no matter the classification it is given by an organization i.e. products, outputs, outcomes, impacts, or some combination of these. Results are interrelated and interdependent; impacts depend on products, for instance, just as outputs should contribute to outcomes. Without the products of individual staff members, organizations would not have deliverables to provide to clients nor

would communities benefit from the outcomes or effects of those deliverables. Therefore, alignment of results is critical to success, much more so than the titles we give those results. Embedded in the phrase improving performance is the notion that improving how people perform is also essential to accomplishing results, although performing and performance are not equivalent. Desired results are rarely accomplished without improvements in how people perform and therefore, performance is considered the combination of the process (that is, performing) and the desired results. Information need is construed in the sense of data or a set of data specially required enabling the user to make an appropriate decision on any related problem facing him or her at any particular time (Solomon 2002).

According to Dervin (1995), information represents an ordered reality about the nature of the world people live in. Research on information needs and information seeking concurs that information is tailored to the individual's job and to their tasks within those jobs (Ingwerson 1996; Zeffane & Gul 1993).Information in an enterprise is important for the production process, the economy of products, technical quality, production capacity, and the market and market related needs, such as competitive intelligence. Mudukuti and Miller (2002) suggested that in the information age, dissemination of information and applying this information in the process of agricultural production will play a significant role in development of farm families. Similarly Sligo and Jameson (1992) have also stressed that farm women must be given training on latest technological skills and maximize production. Meanwhile, a pre-requisite to achieve this, is to assess the information needs of farm women. Information seeking behavior is a broad term encompassing the ways individuals articulate their information needs, seek, evaluate, and use the needed information. A cognition or information acquisition depends on the needs of individuals involved in special activities which may include various forms of agribusinesses. Information and communication sources could be classified into two broad types: internal and external. The information seeking

process may require either or both of these sources. Information needs could be satisfied by either considering farm women individually as self-sustaining information systems or to look at them as a community interacting with each other and with systems within their immediate environment (Kempson 1986; Ikoja-Odongo & Ocholla 2003).A needs-assessment, according to the Borich concept, identifies the performance requirements and the "gap" between existing and needed information (Wingenbach, 2013). Altschuld and Witkin (1995) defined needs assessment as a series of procedures for identifying and describing both present and desired states in a specific context, deriving statements of need and placing the needs in order of priority for later action (Brasier, Barbercheck, Kiernan, Sachs, Schwartzberg &Trauger,2009).

In the modern age of consumerism, needs assessment consists of engaging the stakeholders in community development processes (Tipping, 1998; Yoder-Wise, 1981). Boyle (1981) maintained that evaluation involves comparison between the present situation and the established criteria. As such, the challenge in assessing the educational needs of a farmer is to compare the present situation with the ideal or desired situation. This process involves the making of judgment. The judgment should show the causes of the present situation and accordingly help programmers in making recommendations aimed at altering the situation to its desired state. The judgments about the suitability of different programs to farmers should be made in consultation with the farmers, as they are the ones to be affected by the change (Mead, 1955; Boyle, 1981; McMahon, 1970). The work of women makes up some 43 percent of agricultural inputs, yet they lag far behind in reaching their full potential or remuneration for their labours in comparison with men in agriculture. In general, rural women in agriculture do not have equal access to land rights, education, agriculture training, seeds, water or tools. They also lag behind their male counterparts in accessing information, training and the latest technologies (FAO, 2014b). The relevance of this is supported by Balit

(2006) who points out that the least expensive input for rural development is knowledge. This awareness is echoed by Muvezwa (2006) who suggests that information is now a fifth factor of production in addition to land, capital, labor, and technology. Leeuwis and Van den Ban (2004) recognize that globally, useful information and knowledge on agriculture is in most cases, held by a collection of actors known as Agricultural Information and Knowledge Systems (AIKS). The agricultural information transfer system consists of four main interrelated components namely development, documentation, dissemination, and diffusion (Gundu, 2009).Wayland, Sloan, Edmund des Brunner, Wilbur, & Hallenbeck (as cited in Uko, 1985) emphasized the importance of information in needs assessment when they stated that: "To build a program of adult education on the needs of adults requires the information which indicates what those needs are". Cross (1979) also emphasized the importance of adequate information in achieving a successful needs assessment, when she upheld that information should always precede the technical or subject matter if meaningful needs assessment was to be achieved. According to McMahon (1970), learning to identify needs accurately means closing the gap between relevance and reality. In determining the educational needs of the farmer, the program planner should endeavor to be well acquainted with the present level of competence of farmers in farming as a vocation, their attitudes about farming, their farm operating skills, the operating practices employed by the farmers, their economic status, the farming practices peculiar to the usual techniques employed by the farmers and their judgment about their current farming practices (McMahon, 1970 & Knox, 1969). Other information necessary for meaningful assessment of educational needs of farmers should focus on what the desired situation should be. Evidence about desirable farming practices should come from research findings on appropriate farming techniques, value judgment of professionals and alternatives based on economic status, geographical location and opportunities created by government programs and legislation.

Boyle (1981) maintained that evaluation involves a comparison between the present situation and the established criteria. Therefore, the challenge in assessing the educational needs of a farmer is to compare the present situation with the ideal or desired situation. This process involves the making of judgment. The judgment should Show the causes of the present situation and accordingly help programmers in making recommendations aimed at altering the situation to its desired state. These judgments about the suitability of different programs to farmers should be made in consultation with the farmers, as they are the ones to be affected by the change (Mead, 1955; Boyle, 1981 & McMahon, 1970). Information about the needs of individuals in an enterprise is important for the production process, the economy of products, technical quality, production capacity, and the market and market related needs, such as competitive intelligence. A pre-requisite to achieve this, is to assess the information needs of farm women (Rezvanfar et al 2007).

Information according to Belken and Pao (1989) is the product that emanates from processing, manipulating and organizing data in a way that adds value to the knowledge of the person receiving it and though Stanley (1990) likened information to one of the basic necessities of life after air water, food and shelter, Rezvanfar et al (2007) indicated that information is needed because of its significant effects on the living activities of men. The united nations (2002); FAO(2004); Descastello and Braun(2006) concluded that achieving sustainable agricultural development is not based on material inputs but on the available knowledge and information appropriate for sharing with the farmers.

There are usually five approaches to Needs assessment as shown in Table 1.

Table 1:*Matrix of needs assessment approaches*

Approach	Purpose	When to use	Merits	Demerits
Knowledge & skills assessment	To identify the knowledge and skills required to perform a job	-Implementation of new technology -Identification of training needs -development of training plan	-Ensures training is linked to the learners needs. -Easy to implement	Limited in focus
Job & task Analysis	To determine responsibilities and tasks necessary to perform a job	-Develop new job descriptions. -Identify task listings for new or redesigned job functions, knowledge, skills, abilities and standards. -Developing consistent training requirements especially for technical and specialized jobs.	-Stimulates interest -Defines skill requirement for entry level versus mid level positions -Identifies additional knowledge, skills & abilities to move across or upward within a job function	Has limited focus
Competency based needs assessment	To identify knowledge skills and attitudes for superior job performance	-Identify competencies that are required for jobs. -Measure proficiency levels of people. -Develop standardized train ing. -Develop performance management systems i.e. recruiting, hiring Promoting or career Planning.	-Determines qualities that distinguish average from superior performance. -provides information about Current&& future Predictors or job performance	-Time consuming -Requires high involvement of many people within an organization -Is costly -Requires good project management system for large projects.
Strategic needs assessment	-To examine existing performance problems (reactive) or address new	-To link performance improvement needs to business strategy of the organization or	-Develops long term solutions to existing performance problems or	-Time consuming -Costly in time and personal

		and future performance needs (proactive) within the context of the organizations or the communities business strategy. -Develop long term performance improvement plan.	community. -To Identify performance improvement opportunities at various levels such as individual and organizational Process	new performance needs. -Solves problems that affect core business processes. -Eliminates non- value adding activities	resources -Requires that a business strategy exist
Complex assessment	needs	-To access situations that includes non-training or systemic needs as well as training needs. -To access needs that are complex and require innovation or one or more bodies of expertise beyond needs assessment (e.g. safety, organization development) level.	Because it is more complex than the other four approaches, it is to be used when other approaches are insufficient or when components of the other approaches must be combined.	-provides flexibility	-Time consuming - requires the analyst to innovate-costly -may require the creation of needs, assessment of processes and forms.

Source: Adopted from Sleezer, Russ-Eft and Gupta, 2014.

Concept of Poverty Reduction

Poverty is said to lie at the root of unattainable development (Morgan, 1996 &Yekeen, 2009). The interpretation is that, poverty is antithetical to sustainable development. It is against equity and it impinges on environmental limits. Indeed, 'Sustainability is not just about economy or a given social condition, but coping with stress and insuring against stress. Rural poverty restricts alternatives available to people, restricts capacity for choice making and the pressure on the few available resources increase when people lack alternatives (Yekeen, 2009). Abbas (2012) proposed a rural poverty alleviation index of nine variables. These variables are: (1) Nutrition = food intake; (2) Clothing = use of clothes; (3) Shelter = occupancy of dwelling; (4) Health = health care services received; (5) Education = literacy and years of schooling; (6) Leisure = protection from over work; (7) Security = security in its broadest sense; (8) Social environment = social contacts and recreations; and (9) Physical environment = beauty, cleanliness, amenities and quietness.

There are government agencies and ministries established to implement government policies and programmes intended to provide employment, income generation and to boost increased agricultural production. (Ehisuoria & Aigbokhaebho,2014).They are expected to; among others things provide infrastructure and social services to ameliorate poverty (Osawe, 2004).Various poverty alleviation programmes have been implemented in Nigeria, but the level of success is minimal. Low agricultural productivity, unemployment, poor or lack of infrastructural facilities in the country, inefficient civil services and poor attitude to execution of government projects are among the reasons why the above programmes have not been able to achieve their objectives. The study by Osawe (2004) also revealed that shortage of capital is one of the challenges facing the industries. To solve the problem of financial constraints for rural

industries in Nigeria, the government has put in place various schemes, programmes and policies to finance small and medium scale enterprises particularly in the rural areas which include national poverty eradication programme (NAPEP), and bank of industries (BOI). Despite these policies and programmes, the problem of finance is yet to be overcome because most of the rural entrepreneurs have no collateral security that qualifies them to secure the loan. One way to increase the competitiveness of an industry or product on the global market is to produce more efficiently. Increases in efficiency are captured by measuring the agricultural value added per worker, which is also a proxy for agricultural productivity (Ng & Siebert, 2009).

Agriculture has a great role to play in poverty reduction policies. This significance has been shown by a recent analysis provided by the World Bank (2008), which indicates that agricultural growth as opposed to economic growth in general is typically found to be the primary source of poverty reduction. Investment in agriculture is 2.5 to 3 times more effective in increasing the incomes of the poor than is non-agricultural investment. In particular, it can be argued that agricultural policies that manage to respect, enhance and integrate small holder's practices, local norms, organizations and relations with more modern production systems and technologies can additionally carry high social capital gains, thus further enhancing value chain cooperation and coordination with benefits for all participants. Agricultural development is conceived as embedded in the wider rural livelihood framework and can effectively become a means to allow people to exit the emergency of subsistence and other basic needs fulfillment.

Smallholder farmers which comprise mainly women are significant actors in agriculture globally, producing over 50 % of the current food supply (Scherr, Wallace, & Buck, 2010). Taking distance from poverty for them is a pathway towards improved capabilities, and

incremental freedom to gain access to services and express higher aspirations, far beyond simply increasing agricultural yields and household incomes as an end in and of itself (Sen, 1999).

Rapid increases in agricultural output, brought about by increasing land andlabour productivity, has made food cheaper, benefiting both the urban and rural poor, who spend much of their income on food. According to Smith and Haddad (2002), between 1980 and 2000 the real wholesale price of rice in Dhaka's markets fell from 20 to 11 Taka per kg, bringing major benefits to poor consumers. Poor households typically spend 50–80% of their income on food including many poor farmers (Nugent, 2000). In addition, when the conditions are right, increasing agricultural productivity has increased the incomes of both small and large farmers and generated employment opportunities. These increases in income are particularly important because the proportion of people mainly dependent on agriculture for their income remains high ranging from 45% in East and South East Asia, to 55.2% in South Asia and 63.5% in sub-Saharan Africa (Food and Agricultural Organization of the United Nations statistics division [FAOSTAT] 2004).

A large body of evidence shows that higher agricultural productivity in Asia consistently raised farmers' incomes despite declining market prices resulting from increased output. Small and medium sized farmers have not been excluded from these benefits (Lele & Agarwal, 1989; Lipton & Longhurst, 1989). Increased agricultural productivity has also created employment opportunities on farms, although this did not necessarily result in higher wages (Hazell & Ramasamy, 1991). Cross-country studies estimate that for every 1% increase in agricultural output, farm employment is increased by between 0.3 and 0.6% (Mellor, 2001). It is not just the landless that rely upon this source of income but several farmers who supplement their incomes by working on the farms of others. Poor households usually have limited human, social, physical

and financial resources (Neven, Odera, Reardon & Wang 2009). Individuals and organizations with facilitation and/or brokering skills can help these households to pool their limited resources among themselves or with other actors (for example, NGOs or supermarkets) to achieve economies of scale, enter new markets, or access new resources, such as technical information or credit (World Bank 2006). Although the direct impact of farmer organizations on poverty seems relatively modest, organizations can have important indirect effects on poverty by fostering economic growth, creating employment, preventing buyers from benefiting at the expense of suppliers, building innovation capabilities, and protecting marginal groups (such as women or landless farmers) from further marginalization (World Bank,2012). They can also negotiate with authorities on behalf of their members and increase the public resources invested in poverty alleviation and affirmative action programs. Where poverty reduction is a central goal of economic policy, market access for producers assumes immense significance. Obi, Van Schalkwyk, & Tilburg(2012) also hold the view that how the food marketing system functions also has implications for the pace and level of regional development and so, the food marketing systems of developing countries have naturally been the subject of considerable academic and policy interest in recent times. Recent studies on the role of trade and market access have also shown that significant gains can accrue to farmers if systems and procedures for the marketing of surplus produce are improved, especially in the African context. Rodrik, Roe, Van Schalkwyk & Jooste (as cited in Obi, Van Schalkwyk,& Tilburg, 2012).

Profitable Agribusiness

According to Davis (as cited in Tersoo, 2013)Agribusiness is the sum total of all the operations involved in the manufacture and distribution of farm supplies, production operations on the farm and the strong processing-distribution of commodities and items. Agribusiness

includes not only that productive piece of land but also the people and firms that provide the inputs (i.e. Seed, chemicals, credit etc.), process the output (i.e. Milk, grain, meat etc.), manufacture the food products (i.e. ice cream, bread, breakfast cereals etc.) and transport and sell the food products to consumers (i.e. restaurants, supermarkets etc.). (Babar, 2012). Agribusiness represents a four part system made up of;

(1) The agricultural input sector

(2) The production sector

(3) The processing-manufacturing sector and

(4) The transport and marketing sector.

To capture the full meaning of the term "agribusiness", it is important to visualize these sectors as interrelated parts of a system in which the success of each part depends heavily on the proper functioning of the other two. Agribusiness is a complex system of input sector, production sector, processing- manufacturing sector, transport and marketing sector. Therefore, it is directly related to industry, commerce and trade, Industry is concerned with the production of commodities and materials while commerce and trade are concerned with their distribution (Babar, 2012).The objectives of Agribusiness include the development of a competitive and sustainable private sector led agribusiness sector, particularly in high value areas of horticulture, livestock and fisheries and thereby supporting rural development, employment generation and poverty alleviation, increasing productivity/reducing yield gaps, promoting commercially oriented agriculture activity and advancing high potential sectors (Khalid,2006).

Agribusiness has a large and rising share of GDP across developing countries, typically rising from under 20 percent of GDP to more than 30 percent before declining as economies transform. The majority of agro-enterprises are small, located in rural towns, and operated by

households that often have wage labour and farming as additional sources of income (World Bank, 2007). Increasing agricultural productivity in Africa calls for broader policy and strategic frameworks that encompass agro-industrial and agribusiness services along with farming (FAO as cited in Asenso-Okyere & Jemaneh, 2012).The agricultural system's transformation will have the most impact when innovators have the explicit perspective that the green revolution and agro-industrial and agribusiness development must go hand-in-hand. This perspective will result in innovations that reduce poverty through broad-based economic growth, which includes enhanced food security, employment creation, added value and wealth across the economy's farming and non-farming sectors (Asenso-Okyere & Jemaneh,2012).Scholars argue that empirical evidence shows an unequivocal inverse ratio between farm size and productivity when sustainable technologies and techniques are adopted (Cornia, 1985).

In the many agricultural contexts with labour intensive technology and practices, smallholder farmers tend to perform more productive farming mainly due to (a) higher motivation of labour input, which allows them to apply attention and skill to the farming method, (b) the low substitutability of skilled labour for many sustainable cropping technologies and methods and (c) much of this skilled labour input has the capacity to enhance soil management and thus allow increase of productivity per unit of land. Small farmers also tend to apply a multiple crop farming strategy to take advantage of local peculiarities, in tune with the heterogeneous soil conditions and native agro-ecological systems (Perfecto & Vandermeer, 2010). In terms of comparative transaction cost advantages, small farms have been shown to have significantly lower labour- related transaction costs compared to large plantations, due mainly to the fact that the latter have to bear high costs of unskilled labour supervision and coordination whereas, large farms tend to have transaction cost advantages in terms of access to

market information, capital technology and capacity to access land, input and output markets (Poulton, Dorward & Kydd 2010).

According to Olayida and Heady (1982), the farm supply and production components are very important but they depend on such infrastructural facilities like land, labour, capital, water and management. The nature and character of agribusiness can best be assessed by the kind of synergies that exist between agriculture, and the non-farm sector. The FLO (2007) and WDR (2008) as cited in Tersoo (2013) have it that recent trends have shown a rapid increase in the value adding chain through agribusiness related opportunities which impact greatly on poverty alleviation because it is expected that, agribusiness can spur agricultural growth thereby engendering a strong link with the smallholders that can consequently reduce rural poverty. The value chain obtained from agribusiness opportunities is such that, as the demand and market for agro processing products increase, the supply enterprises component of the tri-aggregates furnishes the farm and sector inputs and services consequently inducing productivity, quality improvements and market innovation. In this situation the agribusiness/agriculture ratio captures (a) the degree of productive and commercial development of agro-related activities (b) the sophistication of agro-industrial backward and forward linkages, (c) the capacity or level of value adding market creation and (d) the importance of distribution and retailing.

In agrarian countries, a higher agribusiness/ratio holds a capacity for diversification and socioeconomic development as Da Silva, Baker, Shepherd, Jenane, and Miranda-da-Cruz (2009) have rightly observed that moving the core economic activities from the farm gate to the agro-industrial sector and its services may represent productive diversification and lead to higher levels of productivity and income generation as well as higher shares of non-farm employment in rural areas. This scenario is made feasible with a dynamic link between the farm sector, rural

industries and all associated activities. According to Marchet, Nasir, Ramachandran , Shah , Tyler and Zhao(2001), Agribusiness concerns in Nigeria constitute 70% of businesses operating in the country. In a survey, the (Nigerian Institute of Social and Economic Research [NISER] 1999) observed that 41 percent of agro industries are sole Proprietorships, while another 41 percent are private limited liability companies. About 4 percent are government owned, and 5 percent are of partnership nature while 8 percent are public liability companies. In Nigeria, agribusiness can be divided into four components; farming inputs supply companies; producing farm firms, processing agribusiness firms and food marketing and distribution.

a. Farm Input Supply Business: This encompasses agricultural chemical inputs suppliers of fuels, fertilizers, pesticides and herbicides seed and feed concentrate suppliers; agricultural machinery and equipment suppliers; automobile, tube, tires, and foam manufacturers; credit and veterinary services suppliers. This supply component extends to supplies of containers, sacks and crates needed in packaging activities. Quite important as well are utilities like water, power, telephone, hospital insurance etc.
b. The Producing Farm Firms: These are crop producers and livestock producers who are farmers scattered all over the country. The growth of this component depends on available large land, improved productive forces and complementarity with industry that absorbs excess agricultural labour.
c. Food Processing Agribusiness: This includes food and fruit juice canners; manufacturers of beer, soft drinks, cocoa drinks, coffee, and tea; producers of confectionary sugar sweets, chocolate, cakes, biscuits; tobacco processors and/or manufacturers; meat processors; wood processors and furniture makers and distributors, paper millers and tissue paper manufacturers; leather and footwear manufacturers; food packaging and cartons

manufacturers; cotton processing, spinning, weaving and textile companies; food processors of cornflakes, jam, bread, butter, milk, margarine, and tomato puree; oils, soap, and toothpaste manufacturers, fishing companies, fish processors, packers and distributors.

d. The Food Marketing and Distribution Agribusiness: Companies in the country include private food stores; wholesalers and retailers of frozen foods including super markets etc (Tersoo, 2013).

According to a Conference on Regional Planning and Economic Development in Africa (as cited in Tersoo,2013) rural development means, "the outcome of series of quantitative changes occurring among a given rural population and whose conveying effects indicate, in time, a rise in the standard of living and favorable changes in the way of life of the people concerned". Lele (1975) also views rural development as the improvement in the living standard of the rural dwellers by engaging them in production activities such as establishment of rural industries that will increase their income. This is the only means of raising the sustainable level of the rural poor by giving them the opportunity to develop their full potentials. Folke and Nielson (2006) define it as "a strategy designed to improve the economic and social life of a specific group – the rural poor". The United Nations (as cited in Ukwu, 1995) defines it as: "A strategy designed to transform rural life by extending to the masses of the rural population the benefits of economic and social progress, it stresses the fundamental principle of the process through equitable access to resources, inputs and services and participation in design and implementation programmes."

In his view, Diejemach, (as cited in Ijere, 1992) argues that, rural development is a process of not only increasing the level of per capita income in the rural areas but also the standard of living of the rural people, depending on such factors as food, (nutrition) level, health, education, housing, recreation and security. Similarly, this socio-economic development

approach is simplified by Jir (1995) where he explained rural development to mean; "the improvement of living conditions in rural areas through increased productivity of agriculture and related enterprises which constitute the main economic activities of the population". Towards achieving this, he emphasized the centrality of inter - sectoral linkages and opines that the rural economy of the country has also been largely hampered by the absence of an effective methodology for integrating agriculture, which is the main economic activity with the other sectors (industry and services) and also with many other factors affecting rural life. The simultaneous planning of the three sectors – agriculture, industry and services – at the level where development activities take place is one sure way to attain complementarity. This is a multi-dimensional and comprehensive approach, the strength of which lies in the achievement of inter - sectoral linkages.

Women in Agriculture

Women play a vital role in advancing agricultural development and food security. They participate in many aspects of rural life – in paid employment, trade and marketing, as well as many unpaid activities, such as tending to crops and animals, collecting water and wood for fuel, and caring for family members. According to Egun (2009) Girls and women constitute about 49 percent of Nigeria's total population. Unfortunately, 61percent of the total population are illiterates, as against 37.7 percent illiterate male population (Nigerian population census [NPC] 1992). According to Adebayo (1997), the education of girls/women would not only enable them harness their potential, but also evolve positive attitudes to life and improve their economic well-being (family income) and the health of individual family members and that of the nation. With a great percentage of the Nigerian population involved in 70 -80 percent of household food

production, the need for the empowerment for better agricultural production/increased productivity cannot be over emphasized. International Fund for Agricultural Development [IFAD] as cited in Egun, 2009).

The World Bank (1996b) Cost-Benefit Analysis indicated that investment in the education of females has the highest rate of return of any possible type of investment in developing nations. Such benefits include greater and higher economic production, improved family and child nutrition, better resource utilization, and longer life expectancy for both men and women. Discoveries in science affect agricultural production if properly applied by a great majority of farmers. Findings in science and technology bring about new ways of doing things and are useful if they are adopted by the greater majority of the people. Uwaka and Uwaegbute (1982) and Egbugara (as cited in Egun, 2009) reported respectively that women do not have full access to land, a major factor in agricultural production. It is therefore necessary that the land tenure system be modified to give access to this great percentage of the population. Women also manage household consumption and food preparation. They face many constraints in the multiple activities they pursue – less land ownership, access to credit, extension and other services, and ability to hire labor. Too often, these constraints as well as women's current and potential contributions to agricultural production go unrecognized (Egun, 2009).

Increasing opportunities for women can have a powerful impact on productivity and Agriculture-led growth. Women are just as efficient agricultural producers as men and can achieve similar yields when given equal access to resources, including training and services. For example, in Kenya, researchers found that women could increase their crop yields by approximately 20 percent if given the same access to the same resources as men. In Burkina

Faso, it has been estimated that overall household production could increase by about six percent by more equitably distributing fertilizer and labor between male and female-farmed plots.

The Food and Agriculture Organization of the United Nations [FAO] (2011) estimates that if women had the same access to productive resources as men, they could increase yields on their farms by 20–30 percent. This increase could raise total agricultural output in developing countries by 2.5–4 percent and reduce the number of hungry people in the world by 12–17 percent. When women's productivity and incomes increase, the benefits amplify across families and generations. Women tend to devote a larger fraction of their income to their children's health and nutrition, laying the foundation for their children's lifelong cognitive and physical development (UN general assembly, 2011).

According to Iruonagbe (2012), women make up more than one-third of the workforce across Africa. They account for 70% of agricultural workers and 80% of food producers (Ajani, 2009). Women come up against all sorts of difficulties in their attempt to be seen as agents for development in their own rights. First and foremost, they have no land ownership rights. In some communities, they have only temporary rights of use of individual fields given to them by the head of the household. Studies have shown that majority of rural women obtained their farmland from their husbands or their families. (Aidoo, 1988).Adepoju (1997) affirmed further that discrimination against women is especially serious in the case of widowhood, when women usually end up without inheritance rights and find themselves subjected to harrowing widowhood rites. Although statutory law provides for women's capacity to inherit assets following the death of their husbands, in practice this is often overridden by the local customary law of succession. It is almost universal in Nigerian customary law that widows have no capacity to inheritance. In traditional Nigerian culture, there is no concept of co-ownership of property by couples, the

presumption being that all substantial property, including land and the woman herself, belong to the husband and are often considered to be part of the household property to be inherited by his relatives (Tuyizere, 2007). Osuntogun (1988) in his study of four communities in Oyo and Ondo States of Nigeria observed that the rural women in his area of study play very significant role in the farming operations of the communities. The women were involved in bush clearing, land preparations, ploughing, hoeing, planting and weeding. It was observed that men do not engage much in farming. They only clear the land for their wives and spend their time hunting and producing palm oil, while the women are left to carry out all the agricultural activities. Most African societies have patriarchal social and cultural structures; consequently, women are oppressed and they suffer several disadvantages in all aspects of life (Ebila & Musiimenta 2004).

Challenges of Women in Agriculture

Gender inequality is a major cause and effect of hunger and poverty: it is estimated that 60 percent of chronically hungry people are women and girls. (World food programme [WFP] 2009).On the average, women make up about 43 percent of the agricultural labour force in developing countries. Evidence indicates that if these women had the same access to productive resources as men, they could increase yields on their farms by 20 to 30 percent, raising total agricultural output in these countries by 2.5 to 4 percent. This would reduce the number of hungry people in the world by around 12 to 17 percent. Almost 70 percent of employed women in South Asia work in agriculture, as do more than 60 percent of employed women in sub-Saharan Africa. This highlights the importance of developing policies and programmes that address their needs, interests and constraints. Women make up more than two-thirds of the world's 796 million illiterate people and while the work of women makes up some 43 percent of

agricultural inputs, they lag far behind in reaching their full potential or remuneration for their labour in comparison with men in agriculture. In general, rural women in agriculture do not have equal access to land rights, education, agriculture training, seeds, water or tools. They also lag behind their male counterparts in accessing information, training and the latest technologies (FAO, 2014). Previous research has identified unique educational needs of women farmers in terms of both content and delivery (Danes, 1996; Lee, 1992; Liepins & Schick, 1998; Trauger, Sachs, Barbercheck, Kiernan, &Brasier, 2008). These needs derive from training and experiences, gendered divisions of labor, and new farm production/business practices. The roles that women have traditionally played on farms in the United States are often viewed as secondary to agricultural production functions (Sachs, 1996 & Whatmore, 1991).

Women have been limited to a specific set of responsibilities on the farm (such as caring for young animals or running errands) in a traditional gendered division of labor and have not taken a lead role in making major decisions about farm production and allocation of resources (Rosenfeld, 1985). As a consequence, many women have not been expected to learn key production skills, nor have they been placed in positions of authority and decision-making (Leckie, 1996; Sachs, 1983; Sachs, 1996; Trauger, 2004). Furthermore, many women have initiated innovative agricultural production practices and have developed new farm-based business ventures, such as value-added production and direct market businesses (Hall &Mogyorody, 2007; Liepins, 1995; Trauger, 2001), for which Extension has only recently developed programming (Hancharick& Kiernan, 2008). Research among women farmers in Pennsylvania reveals that they seek educational events focused on marketing, farm productivity, soil fertility, pest management, and equipment operation and maintenance. They want events in a format that respects their knowledge and desire to learn from one another (Trauger, Sachs,

Barbercheck, Kiernan, & Brasier, 2008).Due to this demonstrated interest and need for educational programming among women farmers, a survey of Pennsylvania State University (PSU) Extension personnel was conducted to understand their experiences with, and knowledge of, women farmers and the extent to which Extension educators target this audience when they develop and market their programs (Brasier et al, 2009).

Women face a myriad of challenges in their agricultural endeavours including but not limited to the following:

- Poor access to improved agricultural technologies that would reduce wastage of their agricultural produce and damages which occur during picking & harvesting.
- Low margins due to seasonality and high perishability agricultural produce.
- Poor access to storage, transport and communication facilities
- Poor knowledge of packing, grading and quality parameters and standards which reduces the shelf life of their products.
- Multiplicity of laws, taxes, duties and regulatory authorities.
- Impediment in the flow of credit from financial institutions to the food processing industry due to the improper understanding of this sector to attain the required level of imparting skill.
- Competition with imported goods in the wake of liberalization of world trade.
- Lack of organized markets, market intelligence, weak database and poor pricing system for marketing the agricultural produce leading to a situation where farmers have to face so many hardships and have to overcome several hurdles to get fair and just prices for their sweat.

- The chain of middlemen between the producers and ultimate consumers who take a heavy share of their produce. Thus the cultivators do not take much real interest in increasing their production.
- Limited access to market information, low level of literacy level among the farmers, multiple channels of distribution that eats away the pockets of both farmers and consumers.
- The government funding of farmers which is still at a nascent stage and the fact that most of the small farmers still depend on the local moneylenders who are leeches and chargers of high rate of interest. (UN women's watch, 2012).

Rural Economy in Edo State

Edo State was created in 1991 out of the former Bendel State. The state has eighteen (18) local government areas. It is predominantly a rainforest region occupying a land area of about 17,802sq. Kilometers. The population of the entire state is approximately four million (National Population Commission, 2006). Edo State has a land mass of 19,749 square kilometers, lying on 05° 44' N and 07° 34' N latitudes and 05° 4' E and 06° longitudes. Edo State is low lying except towards the North axis where the Northern and Esan plateaus range from 183 meters of the Kukuruku hills to 672 meters of the Somorika hills. Edo state is so located that it forms the nucleus of the Niger Delta region. It is bordered by Kogi state to the North and Delta State to the East and South, Ekiti and Ondo states to the west. The state has a typical climate with two distinct seasons; the wet (rainy) and the dry seasons. The wet season lasts from April to November and the dry season December to March (Ebewore, 2013).

The state is mostly covered by the moist tropical forest with lowland rainforest accounting for 76.5% of the total land area of the state. Forestry Management Evaluation and Coordinating Unit [FORMECU] (as cited in Kalu, Oboho & Ihama 2011).With 1.6m hectares of

arable land and a very favorable ecological condition, Edo State is the potential haven for private investors in agribusiness. The Northern part of Edo State shares the same savannah conditions with Northern Nigeria. The South, Central and part of the North also share the rain forest conditions with the rest of Southern Nigeria. A good number of small and big rivers criss-cross Edo State and many of them flow all the year round. The implication of all of the above is that large commercial farms can profitably thrive in Edo State around maize, groundnut, guinea corn, Soybeans, cassava, yam, vegetables, fruits, livestock, fishery, oil palm, cocoa, rubber, pharmaceutical herbs and ornamental trees, etc. (Website unit[Information Communication Technology Agency]Edo State. n. d.).

The basis of the economy is farming, with the main food crops being yam, cassava, plantain, and cocoyam, as well as beans, rice, okra, peppers, and gourds. Oil palms are cultivated for wine production and kola trees for nuts for hospitality rites. Farming is not an exclusively rural occupation, as many city dwellers own farms on the outskirts of the capital and commute regularly to work on them. Domestic animals include cattle, goats, sheep, dogs, and chickens. Most villages have markets, and there are also several large regional markets supplying Benin City and the other towns. In the pre-colonial period, trade was in foodstuffs and locally manufactured products, but in the colonial period cash crops were introduced. By World War I Benin had begun to prosper from the commercial growing of timber and rubber trees. Whereas shifting cultivation used to prevail, with the introduction of cash crops it has begun to disappear in favor of land rotation. Today all farmers grow food crops for their own consumption as well as cash crops. Rubber processing and the preparation of tropical hardwoods are major industries in the state. Benin City's unique position as the state capital, coupled with the discovery of oil and a

tremendous increase in its production in the late 1960s and early 1970s, drew financial resources and industries to itself (Makinwa, 1981).

Value Chain Creation in Agriculture

Farmers earn a small proportion of the value of the product that goes from the farm to the mouth of consumers. This could be the reason why most farmers remain poor. Participation in the value chain could increase the earnings of farmers. Agriculture is embedded in larger and complex "coupled human-environment systems", where its attributes and activities generate multiple feedback loops and interdependencies among the component of these complex systems (Levin & Clark, 2010). In order to promote sustainable agriculture as a means of reducing rural poverty, value chain creation must be considered .This will ensure that multiple market and non-market stakeholders commit to play a role and find synergies, with a clear scope of improving coordination and cooperation in the Agricultural sector that will lead to better and sustained productivity of the female rural farmer. Olayida, Ogunfowora, Essang and Idachaba (1981) argue that agro-industrial linkage constitutes a strategy that appreciates the role of agro-industrialization in the development process of an economy as: stimulating transition to a modernized economy; optimal utilization of scarce resources; engendering complimentarity between small holders and large production units; increasing non-farm employment opportunities and achievement of geographical decentralization of industry and long industrial conurbations. Given the value chain process via employment, income, markets and poverty reduction from agribusiness, the rural sector can attain sustainable growth from raising the farm-nonfarm equilibrium in the following ways.

- Employment: The agribusiness sector is capable of generating employment both directly (on farm) and indirectly (non-farm) from the abundant rural labour supply. Through job creation,

it enhances and expands the market and demand for farm produce, just as the growth of commercial agri food system in the rural areas is capable of galvanizing economic growth. The efficiency and expansion of post-harvest handling, processing and marketing is an important factor in the two edge action of providing food and employment for the people.

- Income Generation/Poverty Reduction: The commercial value of agriculture is capable of generating higher incomes. These new income levels are capable of empowering small holder farmers into large holders. The expanded market increases the financial prowess of the inputs suppliers and the market for the processing firms. However sustainability of incomes accruing from agribusiness depends largely on the dynamic link between the farm and the non-farm sectors. When such incomes increase into investible surplus it stimulates growth of the rural non-farm economies and this becomes an important factor in rural poverty alleviation.
- Food Security: A successful agribusiness is capable of ensuring availability and entitlement of the people to sufficient food at all times to guarantee healthy life. Agribusiness must ensure food availability (via supply) and encourage entitlement of the people with plenty alternative commodity bundles for the people .Haruna and Umar (as cited in Terso, 2013).
- Complementarity/Structural Transformation: A strategic link between the farm and non-farm sectors creates an integrated production structure and a balance between large and small production units. A dynamic agribusiness fuels the growth of the rural nonfarm sector through a number of linkages: while agriculture requires inputs provided by the non-farm enterprises. The rural non-farm sector creates backward integration and forward linkages leading to a fast process of structural transformation.

- Corporate Social Responsibility: Large processing firms are expected to discharge corporate social responsibility to host communities in addition to providing nutritional needs with quality products.

Marchet et al (2001) have also attributed endogenous constraints of agribusiness to include low capacity utilization, inadequate working capital and poor policy articulation amongst others.

1. Poor Policy Articulation: Improper policy articulation encompasses poor support, policy uncertainties/inconsistencies or failure of agricultural policy results from poor institutional arrangements. This problem ranks third in the rating of agribusiness constraints. Idachaba (2000) argues that there has not been a separate policy articulation for agribusiness except for the brief objectives stated in the 1988 Agricultural Policy for Nigeria a document for agricultural commodity processing. These have amounted to unpredictable government activities.
2. Inadequate Working Capital: This includes shortage of funds, raw materials and labour force. In a survey of agro-industries in Nigeria, Marchet et al (2001) discovered that the problem of finance ranks first thereby compounding other problems. Without the requisite capital base, agribusiness cannot flourish nor could it engender economic development. Lack of credit incentives has compounded this problem.
3. Lack of Appropriate Technology: Using either too obsolete or sophisticated technology tends to frustrate the linkage for lack of know-how and cost of maintenance. Where technology happens to be too advanced for the indigenous labour force, it renders the workforce useless while high energy consuming technology truncates production due to high cost of fuels.
4. Inadequate Infrastructure: The state of infrastructure including power, water supply, communication and communal infrastructure like warehouses (stores) drying units, testing labs

and treatment plants to a great extent influence the growth of agribusiness. Marchet et al (2001) argues that the problem of infrastructure is 2 ½ times "worse than the next biggest problem – finance"

5. Farm – level Constraints: The subsistence nature of the small holder farmer added to their geographical dispersal constitutes a high cost for bulking. With poor incentives and vagaries of unpredictable state policies, the farm component of agribusiness faces a seasonality crisis that creates more uncertainties for the non-farm sector.

According to Asenso-Okyere and Jemaneh (2012), taking a value chain approach to economic development and poverty reduction will involve addressing the major constraints and opportunities faced by farmers, producers, processors, traders, and other businesses at multiple levels and points along the path that farm produce follows before it is finally consumed. Small holder participation in agricultural value chains can provide a meaningful approach to poverty reduction and rural development. In such chain context, smallholders can contribute by implementing sustainable farming practices and, through collective action, also take part in the post-harvest agri-business activities downstream (Guidi, 2011). A significant portion of global human population is directly engaged in small scale agriculture, with over 2.2 billion people that manage farms of less than 2-3 hectare size. According to Wye (2005), of the 525 million farms in the world, approximately 85 % are of below 5 acres size and in many developing countries they account for the majority of agricultural land (i.e., 60 % in Ethiopia and 98 % in China). At a global scale, this smallholder phenomenon still provides 50 % of the total supply of food (Scheer et al., 2010).

In tackling the nexus between agriculture and development, the World Development Report 2008 clearly identifies the strategic value of development "enhancing the participation of

smallholders and ensuring the poverty reducing impacts of agricultural growth" (World Bank, 2008,). Even if the volume of these exports was to increase significantly, the impact on growth and poverty would be limited because of the weak links between expanding output of these commodities and overall growth. Diao and Hazell (2004) estimate that if Africa's traditional commodity exports regained their historic market share, agricultural income would only grow by an additional 0.3 to 0.4%. Newer exports, including high-value horticultural, fish and livestock products, offer more potential for growth. European imports of leguminous vegetables increased by 130% between 1989 and 1997, with 75% of this increase coming from sub-Saharan Africa. Some countries have been particularly successful. Kenya's export of fruit and vegetable products for instance has multiplied by 500% since 1974 .These strong linkages or "multipliers" between growth in agriculture and that in the wider economy have allowed poor countries to diversify their economies to sectors where growth is generally faster and labour productivity and wages are higher. Where agricultural productivity has grown slowly, particularly in sub-Saharan Africa, non-farm activities have also tended to grow slowly and to offer low wages (Haggblade, Hazell& Reardon 2002). Individuals may also combine agriculture and non-farm work due to the strong link between agriculture and economic transformation (Kydd, Dorward, Morrison & Cadisch,2004).

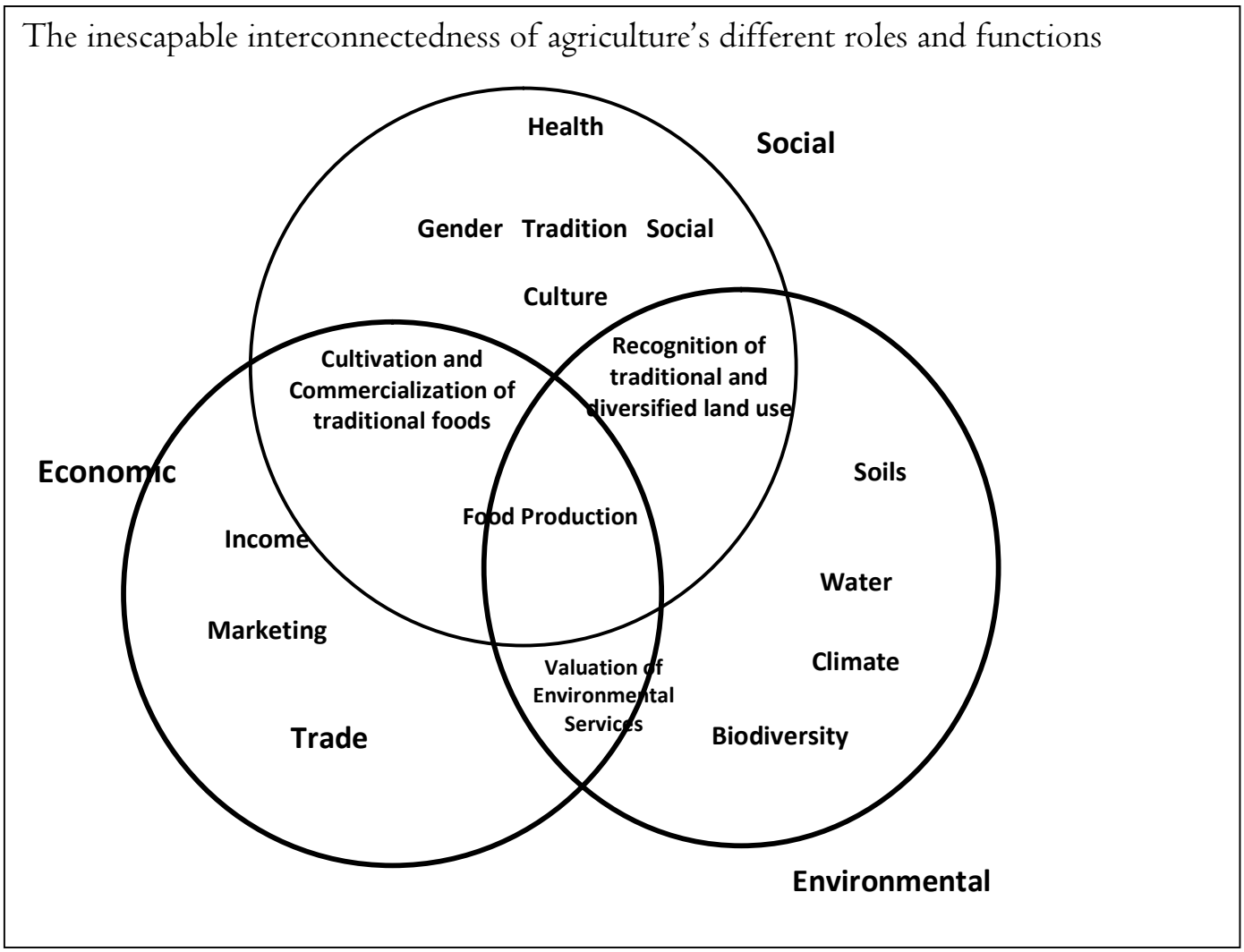

Figure3. A visualization of the multi- functionality of agriculture.Adopted from the United Nations Environment Programme (UNEP), Global resource Information Data base (2008).

Under the threat of their livelihood, small farmers are faced with no other option than adopting coping strategies: natural shocks such as extreme weather events, uncertainty on the property rights of their land, land scarcity that leads to deforestation and lack of access to inputs and capital which could translate to over exploitation of local natural resources are all examples of

factors that are averse to a symbiotic relation between smallholder farming and the local agro-ecosystem. The type of poverty reduction intervention that will promote and sustain a healthy agriculture and rural development that would allow smallholders to secure a rural livelihood while maintaining the local social fabric and their contribution to natural resources balance is a challenge that requires the adoption of a pluralistic approach to the issues at stake, one that goes beyond the positivist science paradigm (Pretty, 1995).

The rewards accruing to certain actors along the chain, therefore, need to be justified by their contribution to value addition. Further, for a balanced and equitable value addition process there needs to be attention to harnessing the potential for it to happen upstream, at the farming and local processing stages. The empirical evidence provided by many value chain analyses suggests that there is often a concentration of rewards in the downstream activities dominated by the large processors and retailers. An analysis of the cocoa market segment, for instance, has shown a clear decline of producer share in the international prices of the largest African exporting countries (United Nations conference on trade and development [UNCTAD] 2008). Similarly, the local trader role, often treated in literature as a "sunk cost", needs to be evaluated objectively in each particular context i.e. if the local traders play just as "middlemen" in transactions between farmers and larger buyers. On the other hand, if the traders bring about some value in terms of market information sharing, know-how transfer, or other services to the farmers (such as informal credit), their role is more credible and justified. A case in Thailand illustrates how a local trader plays a key role in value chain management. The trader specialized in chemical residue free vegetables, linking 40 small farmers to three suppliers to supermarkets in Bangkok, and is responsible for training farmers on the agro-chemicals optimal use, for quality inspection, grading and packaging. The relationship between the trader and the

smallholders is fully based on mutual trust, without a written contract, and proves to be strategic for good chain performance (Shepherd, 2007).

The National Policy on Education (Adult Education)

Morton (as cited in Uko, 1985) emphasized the importance and the need for adequate education in farming when he stated that: "Humanity generally, and the farmer particularly, has no enemy equal, efficiency for evil, to ignorance. Therefore, each tiller of the soil, each farmer, should for himself, individually, investigate the various methods of cultivating land, of producing good crops, and of securing remunerative markets. The study of educational needs of part time/small scale farmers [PT/SF] has been important in view of its potential contributions to the successes of this category of farmers. Since most PT/SF lack the above-mentioned qualifications, they have trouble surviving in farming. The 1ack of sound education in farming technology and management by most PT/SF has not only deprived farmers of their rights to determine for themselves what their particular needs are, but has also exposed them to financial difficulties. The financial difficulties experienced by these farmers has been indicated by the meager incomes earned by most small and part time farmers compared to city workers and large farmers (McWilliams,1945) .The need to educate farmers has not been a new concept to agriculture and the educational system.

In Jamestown, in 1607, American Indians taught the colonists how to produce crops (Anderson, 1982). The government of the United States, over the years, has not relented in its efforts to promote continuing education for farmers. Some important legislative ventures were the Smith Lever Act of 1914 and the Smith-Hughes Act of 1917 (Uko, 1985).Western education in Nigeria transferred activities hitherto carried out at home to the school (Egun, 2009). This has its implication as observed by Bergmann (2002) that there have been complaints that education

was too academic and not preparing the children for life. Consequently, there has been need for policy makers in education to demand for an education which will prepare the young and adults leaving school for self-employment in agriculture and related occupations.

The role which education should play in developing countries has been variously viewed from different perspectives (Fafunwa 1984; Olaitan 1996; Toby 1997). To some, education should play the key role of assisting individuals to have a comfortable environment for themselves while to others; it should develop abilities and potentials in the citizens of the country, improve their skills and other forms of behavior of positive and sometimes of negative value to the society in which he or she lives. The development of abilities and skills in citizenry has been one of the main factors propelling the education policies of developing countries as they are geared towards making the people comfortable and at the same time enabling them to harness the natural resources for which nature has endowed them. In Nigeria, agricultural practices have been the main activity of the people, employing about 70% of the populace before the boom in mineral oil .Nweke, Ugwu, Asiedu & Ayi (as cited in Egun, 2009). About 60% of the population today, are in agriculture in one form or another and have consequently influenced the educational policy and practices of the country (Egbugara, 1990).

The country is endowed with a large expanse of land, good coastal region, appreciable area of mangrove, and able bodied human resources capable of producing enough food for the country and even for export. According to Okeke (2004), the food import bill has been on the increase. Several steps have been taken to reduce this trend and where possible, reverse the trend by different governments such as Operation Feed the Nation, Green Revolution, and Accelerated Food Production Programmes. The educational policies of the country and its attendant objectives point towards self-sufficiency in production and raw materials for agro-

based industries. The extension arm of the Ministry of Agriculture has been expanded and agricultural science made compulsory in schools (Federal republic of Nigeria, 1998, revised 2004). With these steps, it is expected that the country will be sufficient in food items such as rice. Okeke (2004) also reported that 60% of rice and maize consumed in the country were imported. Igbon (as cited in Egun 2009) reported in his study that only 3% of those who were trained in agricultural institutions take to agriculture after leaving school. This same view was held by Mama (1991) when he expressed the fact that there was the danger that Nigeria might face near extinction of the farming population resulting from incapacitation of her farmers by age or death. There is the need, therefore, to refocus and reform the methodology and curriculum of Agricultural Education in Nigeria for better productivity (Egun, 2009).

Reforming education in Africa is not a new phenomenon. Lesotho in 1970 implemented a five year development plan of reformed education to achieve a self-reliant economy with emphasis on agriculture. In 1978, Maseru (Lesotho's capital) conference dubbed "Educational Dialogue" was convened amidst mounting economic problems, with the feeling that education needed to be reformed in line with the ethics of education with production and training for self-reliance. The resolution of the conference was the commitment that learners and people in school should be taught the practical subjects – vocational subjects including agriculture, and the spirit of self-reliance and the fostering of scientific attitudes (Machobare 2000).Realizing the importance of agriculture, Ghana vocationalized secondary school education to prepare the youths in dual capacity of skill acquisition for paid employment and further education (Ahanyampong 2002). Although not much great measures of success were recorded, it provided an impetus for further advancement. Ghana and Nigeria have a common history of education. In Nigeria, reformation of education has been an on-going process from the first educational

ordinance of 1945 (Fafunwa, 1974) to National Policy on Education (NPE, 2004)a progressivism of the1969 curriculum conference (Taiwo, 1980).

Agricultural education therefore should address the challenge of farmer training which should be directed towards improving job efficiency in farming. The kind of education called training is not for knowing more but behaving differently. Farmer training is education that most often takes place outside formal learning institutions. It differs from education in schools because it is geared towards adult learning. Lindeman (as cited by Knowles et al,2005) laid the foundation for a systematic theory about adult learning noting that the approach to adult education will be through the route of situations, not subjects. In conventional education, the student is required to adjust himself to an established curriculum and in adult education the curriculum is built around the students' needs and interests. While the field of adult learning was pioneered by Knowles, Swanson & Holton (2005), Stephen (2000), noted that, an effective training effort involves understanding how adults learn best. Compared to children and teens, adults have special needs and requirements as learners. Subject matter is brought into the situation and is put to work when needed. Learners' experience is the resource of highest value in adult education. Too much of learning consists of vicarious substitution of someone else's experience and knowledge. Experience is the adult learners' living textbook.

According to Holton (as cited in Sajeev, Singha and Venkatasubramanian 2012),experiential learning approaches have the dual benefit of appealing to the adult learners experience base as well as increasing the likelihood of performance change after training. Training needs assessment is one of the crucial steps towards identifying the area of farmers' interest, design and development of curriculum that is best suited to the existing real conditions of farmers. Pholonngoe and Richard (1995) underscored the necessity of need assessment while

stating that if non-formal education trainers hope to foster meaningful development, they should bear in mind that the needs of adults constantly change. Thus, training assessment has to be carried out to design relevant and need based training programmes that can accommodate changes over time. Barbazett (2006), noted that before any actual training is conducted, the training institution must determine the who, what, when, where, why and how of training. Some changes are achievable using a training intervention, others are not. Some changes are more critical than others. Training needs assessment process helps determine the priority of changes in knowledge, skill, attitude and behavior that will provide the greatest impact on achieving organizational or individual goals. Caffarela (2002) noted that a systematic process of farmers' training must include; needs assessment, goal and objectives setting, organizing instructional methods and techniques, monitoring and evaluation.

Conducting training needs assessments is an exhaustive, time consuming, and expensive process that yields tremendously important data. Training needs identification is possible through different analytical procedures (McGhee and Thayer 1961). The possible methods or techniques for individual analysis include performance appraisal, interviews, questionnaires, tests, analysis of behaviour, informal talks, checklist, counseling, critical incidents, recording, surveys, and observations. Training is a circular process that begins with needs identification and after a number of steps ends with evaluation of the training activity. A change or deficiency in any step of the training process affects the whole system. Designing a training and development program involves a sequence of steps that can be grouped into five phases: needs assessment, instructional objectives, design, implementation and evaluation. To be effective and efficient, all training programs must start with a needs assessment (Wentling, Lai, Khor, Mohamed, Escalada & Teoh, 1993).

In so far as enterprise training provides management support and commercial awareness, it affords small farmers a better understanding of their opportunities and how they might be managed (Davis, Ekboir, Mekasha, Ochieng, Spielman & Zerfu, 2007). Chipeta, Christoplos and Katz (2008) supported this, noting that a lack of commercial and market awareness was a major barrier to achieving market success among rural producers and emphasizing that extension or advisory services targeted at rural smallholders should therefore include marketing and business advice and understanding of agricultural value chains, in addition to technical knowledge. Furthermore, enterprise training can help smallholders to introduce progressive production techniques. Davis and Rylance (2005) suggested that training focused on enterprise skills, such as market analysis, distribution and business management would support small-scale farmers in identifying the technologies that would benefit them most and would help them to participate in agricultural innovation. In India, Krishi Vigyan Kendra (KVK) conducted trainings at various levels for which the programmes are designed based on the clientele problems, needs and interests. Normally KVKs have the following types of trainings conducted by them (Venkatasubramanian, Singha, Pourouchottamane, & Sajeev 2009).

1. Training for farmers (On and Off Campus)
2. Training for rural youth (On and Off Campus)
3. Training for extension personnel (On and Off Campus)
4. Sponsored training programmes (On and Off Campus) - For farmers, rural youth and extension personnel.
5. Vocational training programmes (On and Off Campus) - For farmers and rural youth.

Based on duration, the KVK trainings can be classified into:

a. Short duration trainings (1-7 days)

b. Medium duration trainings (8-14 days) and

c. Long duration trainings (3-4 weeks)

(Sajeev, Singha and Venkatasubramanian, 2012).

The most direct path to reform, often catalyzed by external pressure, leads the agricultural university or faculty of agriculture to compare stakeholders' expectations with program offerings and use the gaps between the two to create an agenda for change. The change agenda needs buy-in from university management and, when implemented, needs to be institutionalized through policy, regulations, and formal recognition by the ministries in charge of education and/or agriculture. This "big bang" reform requires leadership and prior agreement among a number of actors, including university management, faculty, and staff; decision makers at the resource allocation and policy levels; stakeholders who employ graduates; and students and their families. The main elements of investments in this type of reform include: Facilitating dialogue between the main stakeholders to agree on the need for and scope of the intended reforms and to assign responsibility for each reform step and activity, undertaking a needs assessment (skills gap assessment) that reflects differences between the capacity of present graduates and the expectations of those that hire them, analyzing the outcome of the needs assessment and designing a change agenda, formulating a strategy for implementing the change agenda and supplying the facilitation capacity to move the strategy forward, convening stakeholder meetings to appraise all involved with progress and resolving difficulties in implementing the change agenda, finalizing the list of change-promoting activities and clearly specifying their implications for governance, organizations, personnel, budgets and finally presenting the detailed change strategy to university management and policy and decision makers at high levels in the government (Maguire,2012).

Agricultural Innovations

Innovation is the process by which individuals or organizations master and implement the design and production of goods and services that are new to them, irrespective of whether they are new to their competitors, their country, or the world (World Bank, 2006). In one way or another, agriculture is integral to the physical and economic survival of every human being. The United Nations forecasts that the global population will reach more than 9 billion by 2050. To feed everyone, food production will have to increase by 70 percent. Helping the world's farmers and fishers to achieve this target is challenging in itself, but beyond providing food, agriculture sustains the economies of most countries in significant ways, especially in the developing world. Smith (2002) recognizes that agricultural farming is one of the most important occupations among rural populations in the world, but most developing countries are 'information-isolated' and only a few can afford to update their knowledge base (Gundu, 2009).

Across Sub-Saharan Africa, for example, agriculture accounts for three-quarters of employment and one third of GDP; 75 percent of the world's poor live in rural areas and have an economic link to agriculture. For very poor households, agricultural development not only is a defense against hunger but also can raise incomes nearly four times more effectively than growth in any other sector. These circumstances help to explain why agricultural development is such a powerful tool for reducing global poverty and eliciting economic development. Agricultural development demands and depends on innovation and innovation systems. Innovation is widely recognized as a major source of improved productivity, competitiveness, and economic growth throughout advanced and emerging economies. Innovation also plays an important role in creating jobs, generating income, alleviating poverty, and driving social development (Juma, 2009). There is a mass of empirical evidence that proves that increasing agricultural productivity

has benefited millions through higher incomes and cheaper food. More importantly, it has provided the spur to economic development outside agriculture where growth and job creation are faster and wages higher. Making the transition to a more diversified and faster growing economy is the key to sustained poverty reduction for the world's poorest countries.

Increasing agricultural productivity has allowed poor countries to take the initial step on to the ladder leading to prosperity. This is particularly the case for labour-intensive, small-scale agriculture with its strong links to growth in other areas. No country has ever successfully reduced poverty through agriculture alone, but almost none have achieved it without first increasing agricultural productivity. Reversing recent disappointing trends in agriculture's performance is critical if poor countries are to escape the trap of slow growth and poverty (DFID, 2005). Agriculture is more vulnerable to the increasing effects of climate change than any other economic sector, and it uses almost 80 percent of the world's freshwater—a vanishing resource in some parts of the world. A changing, less predictable and more variable environment makes it imperative for the world's farmers and fishers to adapt and experiment. They require more knowledge that contributes to sustainable, "green" growth - as well as a greater capacity to help develop such knowledge. Like climatic variability, globalizing markets for agricultural products, far-reaching developments in technology, and equally transformative evolution in institutions (including new roles for the state, the private sector, and civil society) have also been altering agriculture's social and economic landscape over the past few decades (World Bank ,2007). Agriculture increasingly occurs in a context where private entrepreneurs coordinate extensive value chains linking producers to consumers, sometimes across vast distances.

A growing number of entrepreneurial smallholders are organizing to enter these value chains, but others struggle with the economic marginalization that comes from being excluded

from such opportunities. In this context, markets, urbanization, globalization, and a changing environment not only influence patterns of consumption, competition, and trade but also drive agricultural development and innovation far more than before. More providers of knowledge are on the scene, particularly from the private sector and civil society, and they interact in new ways to generate ideas or develop responses to changing agricultural conditions (World Bank, 2012a).If farmers, agribusinesses, and even nations are to cope, compete, and thrive in the midst of changes of this magnitude, they must innovate continuously. Investments in public research and development (R&D), extension, education, and their links with one another have elicited high returns (World Bank 2007) but these investments alone will not elicit innovation at the pace or on the scale required by the intensifying and proliferating challenges confronting agriculture.

For innovation to take place, effective bridging mechanisms are often needed to facilitate communication, translation, and mediation across the boundaries among the various actors in agricultural research and development and between knowledge and action. Such facilitating and bridging mechanisms can include not only diverse innovation coordination mechanisms such as networks, associations, and extension services, but also ICT. ICTs that serve as information "collectors," "analyzers," "sharers," and "disseminators" are already positively affecting agricultural interventions in developing countries. Affordable mobile applications, in particular, provide linkages to previously isolated actors: information on prices, good farming practices, soil fertility, pest or disease outbreaks, and extreme weather has expanded farmers' opportunities to capitalize on markets, react to unfavorable agricultural conditions more effectively, and better interact with public service agents. Satellite imagery and aerial photography have increased the capacity of scientists, researchers, and even insurance providers to study farm conditions in remote areas and assess damage from climatic challenges like drought. Increasingly affordable

technologies like radio frequency identification tags and other wireless devices are improving livestock management, allowing producers to monitor animal health and trace animal products through the supply chain (World Bank, 2012b). Increasing complexity not only of technology but also of the life situation of farmers even in remote areas demands new skills. These skills could enable rural women and men acquire a better insight into the network of problems and recognize the alternative solutions available (Albrecht et al., 1989).

Review of related empirical studies

Expanded access to credit and business development training has enabled several hundred women entrepreneurs and women's cooperatives to triple agricultural production volumes after members learned to keep records of input costs, sales data, profits, and other crucial financial information required by lending institutions (UN,2011).Results from research by Neven, Odera ,Reardon and Wang (2009) showed that the expansion of supermarkets in Kenya led to the development of a new group of medium-sized farms, managed by well-educated farmers. Nearly all farmers delivering to the supermarket channel had the capacity to supply larger volumes all year round. They had access to irrigation, transportation vehicles, a packing shed and a mobile phone, which points to a threshold capital vector needed by farmers before obtaining access to the supermarket channel. While most farmers in the traditional channel sold to brokers and received a price that allowed them at best to break even, farmers delivering to the supermarket channel had considerably higher gross profit margins. This resulted in strong growth for farmers delivering to the supermarket channel who doubled the size of their operations within five years. Results from Annie's project whose aim is to empower women to be better business partners through networks and by managing and organizing critical information (as cited in Eggers, 2002) has shown about 67 percent of the women nationally

reported farm income greater than $150,000. Annie's Project was designed specifically to empower women by providing the necessary tools and networks which are vital to running a successful operation. According to Teo (1996), successful businesswomen have access to current technology, training, and other educational programs. Heins, Beaulieu and Altman (2010) also hypothesize that Annie's Project is increasing women's proficiency in five specific risk categories derived from the literature: marketing, financial, human resource, legal, and production.

In a study conducted by Albracht (1982) to identify the educational needs in agriculture for part-time farmers in Kansas, a survey of all Kansas Young Farmers in 1982 was implemented. The specific purpose was to assess the needs for agricultural instruction to meet the needs of rural or urban residents who do not depend on their land for major income. Implications from the Albracht study also emphasized the need for the involvement of farmers in the identification of the instructional areas of their interest. An important finding of the study by Albracht was that, although the educational needs of PT/SF and large scale farmers might appear to be similar, significant differences existed between the groups. The findings revealed that the PT/SF rated the different instructional areas as more important for their farm operating success than did the large farmers. The study revealed that the PT/SF rated farm mechanics as the foremost instructional area that the farmers needed. This choice was followed by farm management, crop science, soil science and animal science. Results from a study on the Information needs of farm women related to dairy farming and home management in Ilam State of Iran by Rezvanfar et al(2007), also showed that farm women wanted to know more about treatment of animals, controlling external parasites, controlling internal parasites and animal breeding in that order. Nutrition and low cost diet, clean milk production, preparing ration and

reproduction occupied the next four positions. Respondents comparatively showed less interest in information on concentrate production and saving of nutritious material.

Several agricultural education needs have also been identified in a Multi-Faceted Needs Assessment of the Belizean Agriculture Industry by Haley- Porter (2013) i.e. the need for a link with other universities, the need for more government assistance in terms of education, the need for better collaboration with the Mennonite culture, the need to focus on extension education more, and the need for a better information dissemination system. Similar studies by Yusuf, Masika and Ighodaro (2013) on Agricultural information needs of rural women farmers in Nkonkobe municipality: the extension challenge revealed that the information needs of the women farmers varied as it was determined by the type of farming enterprise. Findings from the study revealed that weed constituted a major challenge especially when cow dung was used as fertilizing material due to the growth of undigested weed seeds. Most of the farmers (24.58% n=29) that depend on planting seeds of vegetables directly during winter experienced poor & late germination. Sudden death of chicks (15.25% n=18) Mice and giant rat attack (19.49% n=23) Lice and mites (15.25%=18) Fowl theft (66.95% n=49) and fowl predators (40.68% n=48) were common problems for the scavenging birds. 44.91% n=53 complained about the high cost of feeds for newly hatched chicks with the mother hens in brooding. Insect pests of vegetables (70.3% n=83) constituted another major problem. The farmers reported that insects ate the leaves of cabbage, spinach and carrot thereby reducing the yield and affecting the quality. The study also showed that majority of the respondents 60.2% were of the opinion that accessing vital agricultural information will lead to their being economically empowered followed by farm expansion(16.9%) and better life(14.4%).Other variables were believed to have been encompassed within an economic empowerment framework. The women farmers believed that

economic empowerment is an all-embracing economic, social, cultural and political activity that makes them relevant and recognized in the community. To them, being economically empowered implied that they are able to support their households with nutritious foods, good education, health care and comfortably perform their social functions.

Aurin (2014) on Production information needs of American Boer Goat Association members in the Midwestern United States indicated that health, nutrition and marketing were the most frequently mentioned limiting factors to production systems. All categories also showed that respondents wanted more information regarding all suggested categories of production information. The highest request was for more marketing information. Similar to categories limiting production systems and areas that producers wish to see more information, health had the highest frequency for suggested research topics. Health was followed by medicine/vaccines, which could be combined with health, as could parasites and specific diseases.

A study on training needs of women in agriculture in Delta and Edo states of Nigeria by Ikeoji (2008) also revealed that the women needed training in planting and post planting operations also there was a dire need to train the women in processing, credit procurement techniques and marketing of farm produce. According to Ukonze and Olaitan (2010) in a study on the competency improvement needs of women in agriculture in processing cocoyam into flour and chips for food security in South Eastern Nigeria, it was discovered that improvements were needed in planning and the processing itself. Findings from the study also revealed that improvement was also needed in marketing by women in agriculture for marketing flour and chips for food security. In a study by Ifeanyieze and Okeme (2014) to ascertain the entrepreneurial competency improvement needs of women in Agriculture in processing African yam bean seeds for food security in the North central states of Nigeria, it was discovered that the

women in the study area were found deficient in 13 competency items in planning, 16 in processing, 6 in storage and 7 in marketing of yam bean. Their deficiency could be traced to their culture which resulted into their processing of yam bean seeds for family consumption and very little for sale in the local markets. A study of women farmers' agricultural information needs and accessibility: A case study of Apa Local Government Area of Benue State, Nigeria by Okwu and Umoru (2009) showed that majority of women farmers in the study area had high agricultural information need generally but particularly, in the areas of insecticide, fertilizer and improved farm implements. The major sources of agricultural information to the respondents were their husbands and fellow women. These major sources of information to the respondents in the study area were informal and the reliability of messages through them had no guarantee. The women farmers did not have expected access to professional extension agents. Women farmers' income and educational levels as well as age were found to influence their access to agricultural information.

A needs assessment overview from women farmers in Anambra State, Nigeria by Obiora (2013) described the agricultural related needs of the women thus: information on how to adapt to climate change (M=3.4), information on how to mitigate climate change (M=3.2), improved extension services (M=3.0), metrological information (M=3.0), timely distribution of fertilizer (M=3.0), improved crop varieties (M=3.1), improved animal breeds (M=2.9), easy access and interest-free loans (M=2.9), subsidized farm inputs (M=2.9), adequate marketing information (M=2.9), easier access to productive resources (M=2.9), improved storage facilities (M=2.8), improved processing facilities (M=2.8), subsidized ICT facilities e.g. cell phones, radio etc (M=2.6), inclusion in the planning of agric developmental programme (M=2.6), health and nutrition information (M=2.4), hiring centres for machines and implements (M=2.2), improved

feeder roads (M=2.2), adult education centres (M=2.2), skill acquisition centers (M=2.2).This showcases the extent of various needs by the women. Ndifon, Patrick and Idiku (2012) also assessed the extension education needs of women farmers in South-South Nigeria and found that the respondents needed training in several areas of skill acquisition including equipment maintenance, working with the local government, Planning for retirement, equipment operation, building infrastructure, labour management, marketing products, pest management, increasing productivity, organizing and running meetings, maintaining environmental health and managing finances. Several life skills, management, production and marketing skills that usually exist in extension services were of paramount interest to the respondents.

Summary of Literature Reviewed

Needs assessment is a process of generating empirical and social information that is necessary for the allocation of scarce resources for program development (Monette, 1979).The theory of expert competence proposed by Shanteau gives an insight into the seemingly unproductive nature of agribusinesses carried out by several women as probably being a result of a shortfall in one or more skills. Agriculture has a great role to play in poverty reduction policies. This significance has been shown by a recent analysis provided by the World Bank (2008), which indicates that agricultural growth as opposed to economic growth in general is typically found to be the primary source of poverty reduction. The value chain obtained from agribusiness opportunities is such that, as the demand and market for agro processing products increase, the supply enterprises component of the tri-aggregates furnishes the farm and sector inputs and services consequently inducing productivity, quality improvements and market innovation.

The Food and Agriculture Organization of the United Nations [FAO] (2011) estimates that if women had the same access to productive resources as men, they could increase yields on

their farms by 20–30 percent. This increase could raise total agricultural output in developing countries by 2.5–4 percent and reduce the number of hungry people in the world by 12–17 percent. When women's productivity and incomes increase, the benefits amplify across families and generations because women tend to devote a larger fraction of their income to their children's health and nutrition, laying the foundation for their children's lifelong cognitive and physical development (UN general assembly, 2011). Challenges of women in agriculture include but are not limited to multiplicity of laws, taxes, duties and regulatory authorities and a lack of organized markets, market intelligence, weak database and poor pricing system for marketing their agricultural produce leading to a situation where farmers have to face so many hardships and have to overcome several hurdles to get fair and just prices for their sweat.

The African Development Bank estimates that 90 per cent of Africa's food is produced by women in spite of the fact that few women hold titles to the land they work on. Because of this, rural women's contribution to Africa's agriculture is important for the persistence and success of their families, communities, local and national economies, for poverty reduction and sustainable development. Given that women form over 50% of the world population, their capacity building is crucial for holistic development. Women's empowerment could also be said to comprise building their capacity or making the best of the lives of women for governance and socio-economic advancement. It is obvious that access to literacy or education, information or knowledge resources, natural or material resources, productive skills and capital facilitates the empowerment of women.

There appears to be no current baseline study of the agricultural education needs of women in Edo state. Agriculture is vital to the economy of Nigeria and Edo state in particular as proven from literature reviewed in this study. Though there have been studies on competency

needs for specific agricultural enterprises (Ukonze & Olaitan, 2010; Abbas, 2011; Albracht, 1982; Ebewore, 2013; Haley Porter, 2013; Ikeoji, 2008; Ikoja-Odongo & Ocholla, 2003; Mudukuti & Miller, 2002; Rezvanfar et al, 2007). There appears to be no study to assess the general knowledge and skills required in agricultural education for profitable crop agribusinesses that would translate to poverty reduction in Edo State. The findings of this study hope to identify the deficiencies in Agricultural education as practiced in Edo state which has led to the practice of unprofitable crop agribusinesses by Edo state women there by filling the gap /information deficit in this area of agricultural endeavor for utilization by various stakeholders.

CHAPTER THREE

RESEARCH METHODS

This chapter outlined the procedure for carrying out the study under the following headings:

- Research Design
- Population of the study
- Sample and Sampling technique
- Instrumentation
- Validation of the instrument
- Reliability of the instrument
- Method of data collection
- Method of Data analysis

Research Design

The study utilized the descriptive survey research design. This design makes use of surveys to ask questions about people's beliefs, opinions, characteristics, and behavior (Ary, Jacobs, Sorensen & Razavieh, 2010).The major purpose of descriptive research is to tell what Is (Mohan, 2011).Data are usually collected, organized, analyzed and described as they exist without interfering with them(Uzoagulu,2011).

Population of the Study

The population of the study comprised Two thousand, three hundred and forty nine (2,349) registered women involved in crop Agribusiness in Edo State. This is from available

records at the Edo State Agricultural development programme, the Ministries of Agriculture and commerce and industry (2015).

Table 2:

Population of registered women in crop agribusiness in Edo state

S/N	LOCAL GOVT AREA	PRODUCTION	PROCESSING	MARKETING	TOTAL
1.	IKPOBA – OKHA	61	95	50	206
2.	ORHIONMWON	43	70	20	133
3.	OVIA SOUTH-WEST	84	50	32	166
4.	OREDO	33	90	20	143
5.	OVIA NORTH-EAST	82	70	50	202
6.	EGOR	31	20	30	81
7.	UHUMWONDE	200	115	50	365
8.	ESAN –WEST	79	70	63	212
9.	ESAN NORTH-EAST	11	20	10	41
10.	ESAN CENTRAL	31	34	20	85
11.	IGUEBEN	40	40	32	112
12.	ESAN SOUTH EAST	52	20	40	112
13.	ONWAN WEST	16	37	10	63
14.	AKOKO EDO	31	31	31	93
15.	ONWAN EAST	25	20	19	64
16.	ETSAKO EAST	33	30	31	94
17.	ETSAKO WEST	20	32	20	72
18.	ETSAKO CENTRAL	40	56	7	103
	TOTAL	**914**	**900**	**535**	**2,349**

Source: Edo State Agricultural development programme, Ministry of Agriculture, Commerce and Industry.

Sample and Sampling Technique

The study utilized proportionate stratified random sampling technique in selecting respondents to adequately represent the three major sectors in agribusiness i.e. production,

processing and marketing. Proportionate stratified random sampling ensures greater representativeness of the sample relative to the population and guarantees that minority constituents of the population are represented in the sample (Nworgu, 2006). The Yaro Yamane formula as cited in Uzoagulu (2011) was used to compute the sample size from the population giving a total of (Seven hundred and eighty three) 783 women for the study.

n = N / 1+N (e) 2 Where:

n=sample size; N= Finite population; e=level of significance; 1 =Constant

For production, n=914/1+914(0.05)^2 =278 women (30.4% of the population)

For processing, n =900/1+900(0.05)^2 = 277 women (30.8% of the population)

For marketing, n =535/1+535(0.05)^2 =229 women (42.8% of the population)

Table 3:
Sample size of registered women in crop agribusiness in Edo state used for the study

S/N	LOCAL GOVT AREA	PRODUCTION	PROCESSING	MARKETING	TOTAL
1.	IKPOBA – OKHA	19	29	21	69
2.	ORHIONMWON	13	22	9	44
3.	OVIA SOUTH-WEST	26	15	14	55
4.	OREDO	10	28	9	47
5.	OVIA NORTH-EAST	25	22	21	68
6.	EGOR	9	6	13	28
7.	UHUMWONDE	61	35	21	117
8.	ESAN –WEST	24	23	27	74
9.	ESAN NORTH-EAST	3	6	4	13
10.	ESAN CENTRAL	9	10	9	28
11.	IGUEBEN	12	12	14	38
12.	ESAN SOUTH EAST	16	6	17	39
13.	ONWAN WEST	5	11	4	20
14.	AKOKO EDO	9	10	13	32
15.	ONWAN EAST	8	6	8	22
16.	ETSAKO EAST	10	9	13	32
17.	ETSAKO WEST	6	10	9	25
18.	ETSAKO CENTRAL	12	17	3	32
	TOTAL	**277**	**277**	**229**	**783**

Source: Field data, 2015.

Instrumentation

Three different questionnaires each representing the three major sectors in crop agribusiness (production, processing and marketing) was the instrument used in this study. Each questionnaire was divided into four sections. Section A was structured to elicit information about the socio economic characteristics of the women, section B was structured to assess the agricultural education needs of the women involved in various crop agribusinesses in Edo state with the aid of two 4-point scales. The scale employed a four point rating system of not possessed at all/ not important (1), slightly possessed/slightly important (2), averagely possessed /averagely important (3), highly possessed/Highly important (4) to determine the agricultural educational needs of the women. This scale was used in view of its convenience and compatibility with the Borich model which was employed in this study. The rating scale enabled each task to be assigned a discrepancy score with which the researcher determined the educational needs of the women. Calculation of the discrepancies between the perceived importance of the task and perceived ability to carry out the task enabled the researcher to determine the task with the greatest educational need. This study employed the Borich formula for the computation of the educational need of the women involved in crop agribusiness in Edo State.

MWDS = Sum of weighted discrepancy scores for each task (WDSS) /sample size

Where:

MWDS – Mean weighted discrepancy score

WDS (Weighted discrepancy score) = (Dis) IG

Dis (Discrepancy scores) = importance score – ability score

IG = the perceived average importance of the task as rated by the women.

According to the above formula, The division of the sum of the weighted discrepancy scores for each task by the sample size gives the mean weighted discrepancy score which represents the computed educational need for a particular task. A task which has a negative score would be considered as not being an Agricultural educational need since it would have resulted from a combination of a very low importance score and a very high ability score, or a very low discrepancy score. A task with a score which is relatively close to zero would also not be considered as an Agricultural education need since it would seem that existing knowledge of the task, or the ability possessed to carry out the task, is equal to the respondents' perceived importance of the task. Those tasks having positive scores represent an Agricultural Education need and would therefore be rank-ordered and programming could be planned around those having the highest values. Section C was structured such that average returns in crop agribusiness for each respondent could be estimated from information provided while Section D elicited responses as regards challenges faced by the women in their crop agribusinesses.

Validation of the Instrument

The instruments for the study were validated by a panel of experts comprising the supervisor, a lecturer in the department of Measurement and evaluation and an extension agent in the Edo state Agricultural Development Programme to ensure that data produced was trustworthy and dependable. Validation ensures the appropriateness of an instrument in measuring what it is meant to measure (Uzoagulu, 2011).A pilot study was carried out after the validation of the questionnaires to see how the respondents reacted to the questionnaire and to make sure that everyone in the sample not only understood the questions, but understood them in the same way. The pilot study was carried out with 10 respondents outside the study area. This involved administering the questionnaires to the chosen respondents thus enabling the researcher

to improve upon the overall organization of the instrument, item clarity, and suitability of the instrument and the general appearance of the instrument (Uko, 1985). The pilot study is usually carried out on an identical sample of those on whom it would be used in the main study though on a smaller scale than that of the main study (Nworgu, 2006).The results of pre-testing according to Mohan (2011) can be used to clarify the items in the questionnaire or eliminate some. Necessary modifications were made on the instruments in line with observations raised in the course of the pilot study.

Reliability of the Instrument

Reliability is the extent to which an instrument consistently measures what it is intended to measure (Uzoagulu, 2011). Reliability is the degree to which measures are free from error and therefore yield consistent results (Mohan, 2011). The reliability of the instruments was determined using the Cronbach's alpha method. The instruments were administered once to thirty women (ten from each agribusiness sector) in Ovia North East local government area of Edo state. According to Nworgu (1991), the Cronbach's alpha method can be applied to instruments that are polychotomously scored e.g. attitude scales where there are no preferred answers or essay-type achievement tests in which every response attracts a score. Their responses were scored and imputed into the computer using SPSS (Statistical package for social sciences).The Cronbach alpha formula was then used to obtain alpha values of 0.87, 0.80 and 0.75 for the three instruments on production, processing and marketing respectively.

Method of Data Collection

Data was collected by the researcher duly assisted by extension agents of the Edo State Agricultural Development Programme. The questionnaires were administered to the respondents

during the fortnightly training sessions held monthly in the different zones of the state and were retrieved as soon as they were completed by the respondents. For respondents who could not read, items in the questionnaire were orally presented to them and their responses ticked accordingly. Out of 783 questionnaires administered, 758 were retrieved in this order: production 260/277, processing 274/277 and marketing 224/229 respectively yielding a return rate of 96.8%.

Method of Data Analysis

Descriptive statistics was used in the analysis of data. This included frequency distribution tables, simple percentages, and measures of central tendency. Frequency and Percentages were used to describe the socio-economic variables the barriers militating against efficient use of agricultural resources for profitable agricultural ventures and the identification of the various agribusinesses undertaken by the rural women in Edo State while the Borich formula was utilized to assess the Agricultural education needs of the women/respondents. Gross margin analysis was employed to estimate the average returns on the various agribusinesses undertaken by women in Edo state. Hypotheses one, two and four were tested with analysis of variance, (ANOVA) and multiple regression was used to establish the relationship between socio economic characteristics and Agricultural education needs of the women.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF RESULTS

In this chapter, data obtained from the study were analyzed and presented based on the research questions and hypotheses that guided the study.

Presentation of Results

Research Question One: What are the socio economic characteristics of the rural women involved in crop agribusiness in Edo state?

Table 4:
Socio economic characteristics of rural women in production crop agribusiness in Edo State

VARIABLES	FREQUENCY	PERCENTAGE
AGE (Years)		
Less than 30 years	28	10.8
30-39	52	20.0
40-49	110	42.3
50-59	66	25.4
Greater than 59	4	1.5
TOTAL	**260**	**100**
MARITAL STATUS		
Single	37	14.2
Married	180	69.2
Widowed	22	8.5
Separated	21	8.1
TOTAL	**260**	**100**
HOUSEHOLD SIZE		
Less than 5	92	35.4
5-7	116	44.6
Greater than 7	46	17.7
Nil	6	2.3
TOTAL	**260**	**100**
LEVEL OF EDUCATION		
No schooling	30	11.5
Primary school certificate	74	28.5
Secondary school certificate	78	30
Tertiary Education	74	28.5
Nil	4	1.5
TOTAL	**260**	**100**
YEARS IN BUSINESS		
Less than 5	44	16.9
5- 10	135	51.9
Greater than 10	76	29.2
Nil	5	1.9
TOTAL	**260**	**100**

Source: Field data, 2015.

Table 4 shows the socio economic characteristics of the rural women involved in production agribusiness in Edo state. One hundred and ten (110) representing 42.3 % of the population of women in production agribusiness are aged 40-49 years while 1.5 per cent of them are over 59 years old.69.2 percent of the women in this category are married while 14.2 percent are single. One hundred and sixteen of the respondents representing 45.7 percent of the population have a house hold size of between five and seven persons.28.9 percent of the population have primary school certificate,30 percent have secondary school certificate while another 28.9percent have tertiary education.52.9 percent of the population have been in the production agribusiness for between five and ten years.

Table 5:
Socio economic characteristics of rural women in processing crop agribusiness in Edo State

VARIABLES	FREQUENCY	PERCENTAGE
AGE(Years)		
Less than 30 years	68	24.8
30-39	70	25.5
40-49	94	34.3
50-59	33	12.0
Greater than 59	9	3.3
TOTAL	**274**	**100**
MARITAL STATUS		
Single	50	18.2
Married	151	55.1
Widowed	53	19.3
Separated	20	7.3
TOTAL	**274**	**100**
HOUSEHOLD SIZE		
Less than 5	108	39.4
5- 7	114	41.6
Greater than 7	48	17.5
Nil	4	1.5
TOTAL	**274**	**100**
LEVEL OF EDUCATION		
No schooling	44	16.1
Primary school certificate	84	30.7
Secondary school certificate	74	27.0
Tertiary Education	72	26.3
TOTAL	**274**	**100**
YEARS IN BUSINESS		
Less than 5	101	36.9
5- 10	126	46.0
Greater than 10	47	17.2
TOTAL	**274**	**100**

Source: Field data, 2015.

Table 5 shows the socio economic characteristics of the rural women involved in processing agribusiness in Edo state. Ninety four respondents(94) representing 34.3 percent of the population are aged 40-49 years while 3.3 percent of them are over 59 years old.55.1 percent of the women in this category are married while 18.2 percent are single. One hundred and fourteen of the respondents representing 42.2 percent of the population have a house hold size of between five and seven persons.30.7 percent of the population have primary school certificate, 27 percent have secondary school certificate while another 26.3 percent have tertiary education while 16.1 percent have no schooling at all. 46.0 percent of the population have been in the production agribusiness for between five and ten years.

Table 6:

Socio economic characteristics of rural women in marketing crop agribusiness in Edo State

VARIABLES	FREQUENCY	PERCENTAGE
AGE(Years)		
Less than 30 years	16	7.1
30-39	49	21.9
40-49	95	42.4
50-59	63	28.1
Greater than 59	1	0.4
TOTAL	**224**	**100**
MARITAL STATUS		
Single	22	9.8
Married	120	53.6
Widowed	55	24.6
Separated	27	12.1
TOTAL	**224**	**100**
HOUSEHOLD SIZE		
Less than 5	27	12.0
5- 7	139	62.0
Greater than 7	46	20.5
Nil	12	5.4
TOTAL	**224**	**100**
LEVEL OF EDUCATION		
No schooling	74	33.0
Primary school certificate	98	43.8
Secondary school certificate	52	23.2
Tertiary Education	Nil	Nil
TOTAL	**224**	**100**
YEARS IN BUSINESS		
Less than 5	74	33.0
5- 10	128	57.1
Greater than 10	20	8.9
Nil	2	0.9
TOTAL	**224**	**100**

Source: Field data, 2015.

Table 6 shows the socio economic characteristics of the rural women involved in marketing agribusiness in Edo state. Ninety five respondents(95) representing 42.4 percent of the population are aged 40-49 years while 0.4 percent of them are over 59 years old.53.6 percent of the women in this category are married while 9.8 percent are single. One hundred and thirty nine respondents representing 65.6 percent of the population have a house hold size of between five and seven persons.43.8 percent of the population have primary school certificate, 23.2 percent have secondary school certificate.33.0 percent have no schooling at all and none of the respondents have tertiary education .52.9 percent of the population have been in the production agribusiness for between five and ten years.

Research question two: What various crop agribusinesses are undertaken by rural women in Edo state?

Table 7:
Types of production crop agribusinesses undertaken by rural women in Edo state

Crop	Frequency	Percentage
Oil palm	8	3.1
Beans	2	0.8
Bush mango	2	0.8
Cassava	121	46.6
Cashew	1	0.4
Cocoyam	1	0.4
Citrus	2	0.8
Cocoa	3	1.2
Groundnut	1	0.4
Vegetables	6	2.4
Maize	25	9.6
Melon	2	0.8
Okro	1	0.4
Pepper	4	1.5
Pineapple	31	11.9
Plantain	40	15.1
Rice	1	0.4
Yam	9	3.6
TOTAL	260	100

Source: Field data, 2015.

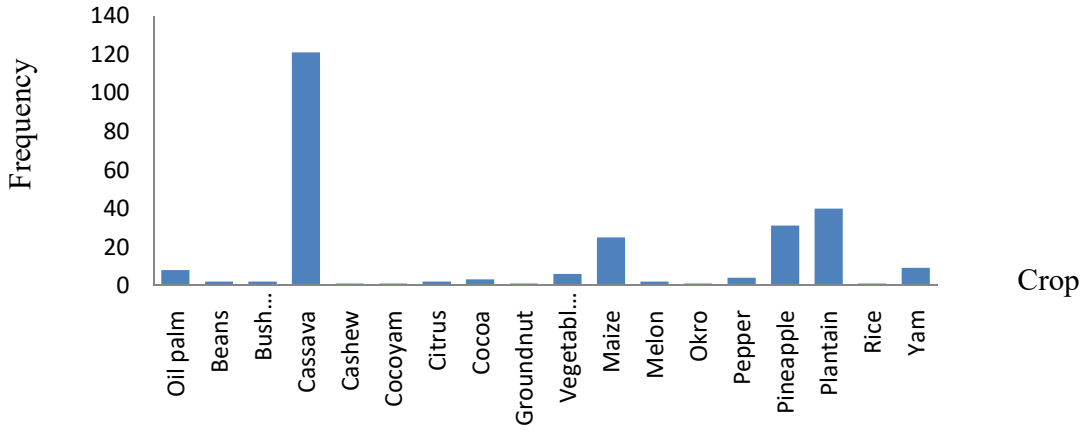

*Figure 4.*Bar chart showing types of production crop agribusinesses undertaken by rural women in Edo state

Table 7 shows the predominant type of production crop agribusiness undertaken by women in Edo state is cassava production .It is being undertaken by 46.6 percent of the sample. Plantain and pineapple are next in line being undertaken by 15.1 and 11.9 percent of the respondents respectively.

Table 8:

Types of processing crop agribusinesses undertaken by rural women in Edo state

Crop	Frequency	Percentage
Pineapple	6	2.2
Gari	165	60.2
Cocoa	1	0.4
Cocoyam	2	0.8
Fufu	29	10.7
Groundnut	14	5.1
Maize	34	12.4
Melon	3	1.1
Pepper	2	0.7
Plantain	7	2.6
Tomato	3	1.1
Vegetable	3	1.1
Yam	5	1.8
TOTAL	**274**	**100**

Source: Field data, 2015.

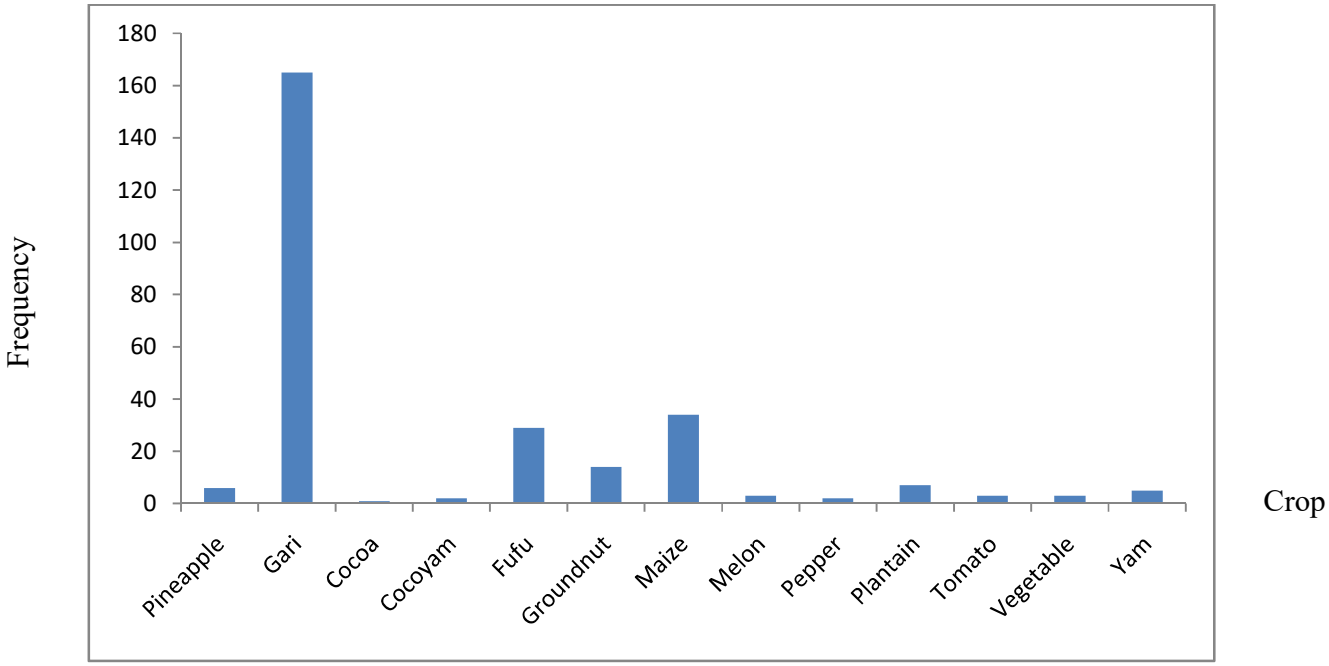

Figure 5.Bar chart showing types of processing crop agribusinesses undertaken by rural women in Edo state

The predominant type of processing crop agribusiness undertaken by women in Edo state as shown in table seven is the processing of cassava in to gari .It is being undertaken by 60.2 percent of the respondents. Fufu and maize are next in line being undertaken by 10.7 and 12.4 percent of the respondents respectively.

Table 9:

Types of marketing crop agribusinesses undertaken by rural women in Edo state

Crop	**Frequency**	**Percentage**
Cocoyam	1	0.4
Gari	71	31.7
Maize	3	1.5
Melon	1	0.4
Pepper	5	2.2
Pineapple	51	22.7
Plantain	15	6.7
Tomato	5	2.2
Yam	8	4.6
TOTAL	**224**	**100**

Source: Field data, 2015.

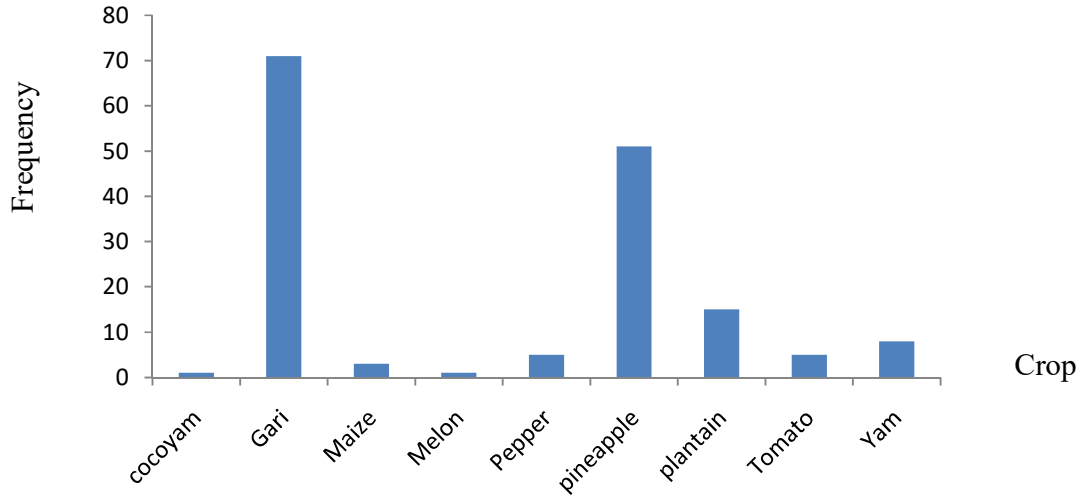

Figure 6. Bar chart showing types of marketing crop agribusinesses undertaken by rural women in Edo state

Table 9 reflects gari marketing as the predominant type of marketing crop agribusiness undertaken by women in Edo state. It is being undertaken by 31.7 percent of the respondents. Cassava and pineapple are next in line being undertaken by 27.6 and 22.7 percent of the respondents respectively.

Research Question 3 : What is the average return on the various crop agribusinesses undertaken by women in Edo state?

Table 10:
Gross margin of crop production Agribusiness of women in Edo state

Item	**N**
Returns from crop production agribusiness	174,593.00
LESS	
Packaging material	6,709.74
Security	6,083.72
Sundry bills /tax	17,320.31
Cost of seed /planting material	14,850.48
Cost of herbicides	13,404.26
Cost of pesticides	10,483.96
Cost of fertilizer	7,439.60
Cost of hiring farm machinery/equipment	13,633.72
Storage cost	29,813.33
Cost of renting /land acquisition	39,794.29
Cost of land preparation/cultural practices	15,384.49
Total item cost	15,9533.41
Gross margin	15,059.59

Source: Field data, 2015.

Table 10 shows the average returns from production agribusiness to be N15059.59/monthly

Table 11*:*
Gross margin of crop processing Agribusiness of women in Edo state

Item	**N**
Returns from crop processing agribusiness	95,000.00
LESS	
Packaging material	10,000.00
Security	10,000.00
Sundry bills /tax	10,000.00
Cost of produce to be processed	30,000.00
Cost of storage	5,000.00
Maintenance of processing equipment	5,000.00
Cost of transportation/supply	10,000.00
Total item cost	80,000.00
Gross margin	15,000.00

Source: Field data, 2015.

Table 11 shows the average returns from processing agribusiness to be N15, 000/monthly

Table 12:
Gross margin of crop marketing Agribusiness of women in Edo state

Item	**N**
Returns from crop marketing agribusiness	124,947.50
LESS	
Packaging material	20,000.00
Security	3,000.00
Sundry bills /tax	16,635.05
Cost of produce to be sold	20,555.45
Cost of storage/preservation	10,000.00
Cost of rent for shop/business place	5,000.00
Cost of transportation /supply	7,500.00
Total item cost	82,690.05
Gross Margin	42,257.45

Source: Field data, 2015.

Table 12 shows the average returns from production agribusiness to be N42, 257. 45/month

Research Question 4: What specific aspects of Agricultural education would enhance the agricultural productivity of rural women in crop production, processing and marketing agribusinesses in Edo state?

Table 13:
The Agricultural Education needs of the rural women in crop production agribusiness

Rank	Tasks	Importance	Ability	MWDS
1.	Source fund for the enterprise	3.62	2.67	3.69
2.	Formulate objectives/goals for the production enterprise	3.57	2.85	2.97
3	Access to extension agents	3.58	2.89	2.55
4.	Access to Information channels that will enhance agribusiness	3.51	2.82	2.46
5	Employing qualified personnel at affordable cost to the enterprise	3.28	2.57	2.36
6	Storage of farm produce	3.35	2.76	2.26
7	Selecting an appropriate farm business record system.	3.20	2.55	2.23
8	Determine the type of farm enterprise to develop.	3.72	3.08	2.15
9	Attendance of agricultural conferences and shows	3.36	2.74	2.13
10	Access to market information	3.58	3.00	2.09
11	Recording production and sales information.	3.40	2.88	2.05
12	Value addition to products for better competitiveness	3.23	2.67	2.04
13	Keeping record of farm business inventory.	3.27	2.76	2.01
14	Obtain a suitable site for the enterprise	3.38	2.82	1.96
15	Keeping record of equipment maintenance information.	3.18	2.72	1.90
16	Determine whether to participate in government farm programs.	3.50	2.99	1.88
17	Interpreting market reports.	3.21	2.65	1.85
18	Analyze farm records for decision-making purposes.	3.32	2.78	1.82
19	Ability to diversify the agribusiness	3.08	2.57	1.81
20	Fertilizer application	3.07	2.54	1.79
21	Ability to select market places.	3.28	2.76	1.74
22	Compare storage costs with selling at harvest.	3.28	2.78	1.74
23	Grading of produce	3.21	2.71	1.64
24	Reconcile sales with production cost to ascertain profit or loss	3.50	3.02	1.33
25	Irrigation methods	2.73	2.32	1.09
26	Pesticide application	3.01	2.68	0.98
27	Assemblage of produce.	3.27	3.02	-2.03

Source: Field data, 2015

Table 13 shows the mean weighted discrepancy scores of the various tasks listed in production agribusiness .the task with the highest mean and therefore having the greatest agricultural

education need is sourcing fund for enterprise (3.69) while assemblage of produce came through as not being an Agricultural education need (-2.03).

Table 14:

The Agricultural Education needs of the rural women in crop processing agribusiness

Rank	Tasks	Importance	Ability	MWDS
1.	Ability to develop strong alliances with women groups	3.32	2.24	4.32
2	Source fund for the enterprise	3.55	2.90	2.49
3	Reconcile sales & production cost to ascertain profit or loss	3.54	2.97	2.23
4	Determine the type of processing enterprise to develop.	3.73	3.28	1.72
5	Methods of storing farm produce	3.4	2.92	1.65
6	Access to improved processing equipment.	3.51	3.08	1.52
7	Access to Information Channels that will enhance agribusiness	3.58	3.06	1.66
8	Proper hygiene/sanitation during processing	3.32	2.95	1.25
9	Formulate objectives for the processing enterprise	3.03	2.65	1.18
10	Attendance of agricultural conferences and shows	2.87	2.44	1.18
11	Keeping record of farm business inventory.	2.71	2.28	1.15
12	Identify relevant resources for the enterprise	3.16	2.85	1.04
13	Keeping record of equipment maintenance information.	2.87	2.51	0.99
14	Recording production and sales information.	3.17	2.88	0.94
15	Access to market information	2.85	2.53	0.89
16	Better farm produce processing Methods	3.37	3.14	0.72
17	Obtain a suitable site for the enterprise	3.35	3.13	0.71
18	Employ qualified personnel for the enterprise	2.78	2.51	0.63
19	Ability to diversify the agribusiness	2.92	2.72	0.61
20	Access to extension agents	3.53	3.35	0.60
21	Survey market for acceptance of the processed product	2.96	2.77	0.53
22	Analyze farm records for decision-making purposes.	2.51	2.31	0.51
23	Interpreting market reports	2.3	2.03	0.46
24	Grading of produce	2.22	2.01	0.45
25	Packaging methods to enhance sale and shelf life	2.71	2.56	0.39
26	Knowledge of shelf life of processed products	2.4	2.70	-0.59
27	Value addition to products for better competiveness	2.41	2.57	-0.37

Source: Field data, 2015.

Table 14 shows the mean weighted discrepancy scores of the various tasks listed in processing agribusiness .The task with the highest mean and therefore having the greatest agricultural education need is ability to form strong alliances with women groups(4.32) and sourcing fund for enterprise(2.49) is the next task requiring agricultural education. Value addition to products for better competiveness came through as the task with the least Agricultural education need (-0.37).

Table 15:
The Agricultural Education needs of the rural women in crop marketing agribusiness

Rank	Tasks	Importance	Ability	MWDS
1	Storage methods	3.77	2.70	4.19
2	Market information: Areas of surplus and areas of need.	3.2	2.42	2.54
3	Keep record of equipment maintenance information.	3.08	2.37	2.28
4	Determine means of supplying to buyers for profit maximization	3.84	3.48	2.17
5	Analyze business records for decision-making purposes.	2.78	2.15	2.01
6	Add value to products for better competitiveness	2.35	1.60	1.88
7	Formulate objectives for the agro marketing enterprise	3.83	3.41	1.80
8	Keep record of farm business inventory.	2.57	2.05	1.77
9	Bargain for fair price	3.34	2.86	1.71
10	Ability to diversify the agribusiness.	2.91	2.41	1.67
11	Compare storage costs with selling at harvest.	3.04	2.48	1.64
12	Follow product price trends.	3.12	2.67	1.57
13	Determine when to market products.	2.79	2.37	1.43
14	Grading the products according to quality	3.17	2.95	0.79
15	Reconcile sales with input costs to ascertain profit or loss	2.41	2.14	0.60
16	Handling of produce	2.88	2.67	0.58
17	Employ qualified persons at affordable cost to the enterprise	2.69	2.59	0.39
18	Attendance of agricultural conferences and shows	2.5	2.36	0.37
19	Access information channels that will enhance agribusiness	2.54	2.40	0.32
20	Determine price for different grades of produce	3.01	2.90	0.31
21	Record business receipts.	1.98	1.84	0.29
22	Calculate expected returns and profit from sales.	1.92	1.81	0.15
23	Access to extension agents	3.1	3.05	0.14
24	Source fund for the enterprise	3.59	3.57	0.05
25	Interpretation of market reports.	1.96	1.95	0.03
26	Record business expenses.	2.42	2.53	-0.29
27	Fumigate the store/warehouse to guard against storage pests.	2.83	2.99	-0.40

Source: Field data, 2015.

Table 15 shows the mean weighted discrepancy scores of the various tasks listed in the marketing agribusiness .The task with the highest mean and therefore having the greatest agricultural education need is storage methods (4.19) and market information i.e. areas of surplus and areas of need (2.54) is the next task according to the ranking requiring agricultural education. Fumigation of store/warehouse to guard against storage pests came through as the task with the least Agricultural education need (-0.40).

Research question 5: What are the barriers militating against efficient use of Agricultural resources by rural women in Edo State for profitable crop Agribusinesses?

Table 16:

Barriers militating against effective use of Agricultural resources by rural women in Edo state for profitable crop production agribusinesses.

Challenge	YES Frequency	%	NO Frequency	%
Lack of storage facilities	204	78.5	52	20.0
Inadequate capital	246	95.0	13	5.0
Lack of access to improved seeds/planting materials	135	52.1	124	47.9
Poor patronage	149	57.5	110	42.5
Lack of adequate transportation	194	74.6	66	25.4
Lack of market information	176	68.0	83	32.0
Unavailability of extension agents	112	43.2	147	56.8
Difficulty in renting/purchasing land	177	68.3	82	31.7
Theft	169	70.4	71	29.6

Source: Field data, 2015.

Table 16 shows the mean responses of women as regards barriers militating against efficient use of agricultural resources by rural women for profitable crop production agribusiness. Inadequate

capital seemed to be the foremost barrier Ninety five percent of the respondents indicated as such. The next barrier is a lack of storage facilities 78.5 percent followed by theft (70.4) percent.

Table 17:

Barriers militating against effective use of Agricultural resources by rural women in Edo state for profitable crop processing agribusinesses.

Challenge	YES Frequency	%	NO Frequency	%
Lack of storage facility	239	89.8	27	10.2
Inadequate capital	255	94.4	15	5.6
Inadequate processing equipment	211	78.1	59	21.9
Poor patronage	211	78.1	59	21.9
High cost of equipment & materials for processing	213	80.1	53	19.9
Lack of market information	206	77.2	61	22.8
Dissemination of research findings	186	69.1	83	30.9

Source: Field data, 2015.

Table 17 shows inadequate capital to be the foremost barrier militating against efficient use of agricultural resources by rural women for profitable crop processing agribusiness as indicated by 94.4 percent of the mean responses obtained. The next barrier is a lack of storage facilities 89.8 percent followed by inadequate processing equipment/poor patronage (78.1) percent each.

Table 18:
Barriers militating against effective use of Agricultural resources by rural women in Edo State for profitable crop marketing agribusinesses.

	YES		NO	
Challenge	**Frequency**	**%**	**Frequency**	**%**
Lack of storage facility	218	99.1	2	0.9
Inadequate capital	218	98.6	3	1.4
Marketing costs	215	97.3	6	2.7
Poor patronage	218	98.6	3	1.4
Lack of adequate transportation	210	95.0	11	5.0
Lack of market information	210	94.6	12	5.4

Source: Field data, 2015.

Table 18 shows lack of storage facilities to be the foremost barrier militating against efficient use of agricultural resources by rural women for profitable crop marketing agribusiness. Ninety nine percent of the respondents indicated as such. The next barrier is inadequate capital/poor patronage 98.6 percent followed by marketing costs (97.3) percent.

Hypothesis 1: There is no significant difference in the average returns of the rural women involved in the different sectors of crop agribusiness in Edo state.

Table 19:
Descriptive statistics of average returns in crop agribusiness

Agribusiness	N	Mean	Std. deviation
Marketing	224	24156.78	22940.596
Processing	274	31572.10	19796.494
Production	260	74593.10	111952.223
Total	**758**	**45264.567**	**3503.497**

Source: Field data, 2015.

Table 20:

ANOVA summary of average returns in crop agribusiness

Source of Variance	Sum of Squares	D.F	Mean square	F	P	Decision
Between group	3.491E11	2	1.746E11	35.580	.001	Significant
Within group	3.341E12	681	49060E6			
Total	**3.690E12**	**683**				

P≤.0.05 = Reject

Source: Field data, 2015.

Table 20 shows there is significant difference in the average returns in crop agribusiness. This can be seen in table 20 were the P value is less than 0.05.

Hypothesis 2: Significant difference does not exist in the barriers faced by women in the different sectors of crop agribusiness.

Table 21:

Descriptive statistics of barriers faced by women in crop agribusiness

Agribusiness	N	Mean	Std. deviation
Marketing	224	7.09	.790
Processing	274	8.31	1.208
Production	260	11.76	1.754
Total	**758**	**9.13**	**2.369**

Source: Field data, 2015

Table 22:

ANOVA summary of barriers faced by women in crop agribusiness

Source of Variance	Sum of Squares	D.F	Mean square	F	P	Decision
Between group	2915.047	2	1457.524	824.604	.001	Significant
Within group	1334.495	755	1.768			
Total	**4249.542**	**757**				

P≤.0.05 = Reject

Source: Field data, 2015.

Table 22 shows there is significant difference in the barriers to effective use of agricultural resources for profitable crop agribusiness since the p value obtained was less than 0.05.

Hypothesis 3: There is no significant relationship between the socioeconomic characteristics of the women and their computed agricultural education needs.

Table 23:

Regression analysis for socio economic characteristics and Agricultural education needs for production agribusiness.

Model	Sum of squares	D.F	Mean Square	F	P
Regression	4.483	5	.897	.901	.503a
Residual	16.906	17	.994		
Total	21.388	22			

P≤.0.05 = Reject

Source: Field data, 2015

Table 23 shows a P value greater than 0.05 therefore there is no significant relationship between the socio economic characteristics of the women involved in production crop agribusiness and their computed agricultural Education needs.

Table 24:

ANOVA for socio economic characteristics and Agricultural education needs for production agribusiness.

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.458[a]	.210	-0.23	.99722672

a. Predictors (constant) No of years in business, level of Education, Marital status, household size, age.

b. Dependent Variable: Agric. Education needs

Source: Field data, 2015

The negative adjusted R square value in table 24 also confirms there is no significant relationship between the socio economic characteristics of the women in production crop agribusiness and their computed agricultural education needs.

Table 25:

Regression analysis for Socio economic characteristics and Agricultural education needs for processing crop agribusiness.

Model	Sum of squares	D.F	Mean Square	F	P
Regression	2.551	5	.510	1.089	.397[a]
Residual	9.373	20	.469		
Total	11.924	25			

P≤.0.05 = Reject

Source: Field data, 2015

Table 25 shows a P value greater than 0.05 therefore there is no significant relationship between the socio economic characteristics of the women involved in processing crop agribusiness and their computed agricultural Education needs.

Table 26:

ANOVA for Socio economic characteristics and Agricultural education d for processing crop agribusiness.

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.463[a]	.214	-017	.68457917

a. Predictors (constant) No of years in business, level Education, Marital status, household size, Age.

b. Dependent Variable: Agricultural Education needs

Source: Field data, 2015

The negative adjusted R square value (-0.17) in table 26 also confirms there is no significant relationship between the socio economic characteristics of the women in processing crop agribusiness and their computed agricultural education needs.

Table 27:

Regression analysis for socio economic characteristics and Agricultural education needs for marketing crop agribusiness.

Model	Sum of squares	D.F	Mean Square	F	P
Regression	7.116	4	1.779	1.734	.178[a]
Residual	22.569	22	1.026		
Total	29.685	26			

P≤.0.05 = Reject

Source: Field data, 2015.

Table 27 shows a P value greater than 0.05 meaning that there is no significant relationship between the socio economic characteristics of the women and their computed agricultural Education needs.

Table 28:

ANOVA for socio economic characteristics and Agricultural education needs for marketing agribusiness.

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.490[a]	.240	-101	1.01284610

a. Predictors (constant) No of years in business, level of Education, Marital Status, household size, age.

b. Dependent Variable: Agricultural Education needs

Source: Field data, 2015.

Adjusted R square value (-101) in table 28 also confirms there is no significant relationship between the socio economic characteristics of the women in marketing crop agribusiness and their computed agricultural education needs.

Hypothesis 4: The mean responses in the agricultural education needs of the rural women involved in processing, production and marketing agribusinesses are not significantly different.

Table 29:

Mean responses on the Agricultural Education needs of women in production, processing and marketing crop agribusiness.

Agribusiness	N	Mean	Std. Deviation
Marketing	27	1.1106904	1.06851954
Processing	27	1.0692307	.93790523
Production	27	1.8701919	.94484077
Total	81	1.3500377	1.04132208

Source: Field data, 2015.

Table 30:

ANOVA on the agricultural Education needs of women in production, processing and marketing agribusiness.

Variance	Sum of Squares	df	Mean Squares	F	P	Decision
Between groups	10.981	2	5.490	5.652	.005	Sig
Within groups	75.767	78	.971			
Total	86.748	80				

P≤.0.05 = Reject

Source: Field data, 2015.

Table 30 shows P value less than 0.05 therefore significant difference exits in the educational needs of women in production, processing and marketing crop agribusiness.

Discussion of Results

Discussion of the results of this study is presented below.

Sixty nine (69) percent of women involved in crop agribusiness are married, between the ages of 40-49 years and have at least a primary school certificate.42.3 percent of the population of women in crop production agribusiness are aged 40 – 49 years, the next highest percentage of 25.4 percent are aged 50-59 years.34.3 percent of the women in crop processing agribusiness are between40 and 49 years and 12 percent between 50 and 59 years. In the marketing crop agribusiness 42.4 percent are aged 40-49 years and 28 .1percent 50-59 years. A larger percentage of the population of women are also married with household size of between 5 and 7.The bulk of the population among the production, processing and marketing crop agribusiness also have primary school certificate as their level of Education. The fact that majority of the women are

married agrees with Onyemobi (2000) who asserted that rural women play a key role in supporting their households and communities in achieving food and nutrition security, generating income and improving rural livelihoods and overall well-being. He also opined that Millions of women also work as farmers, farm workers and natural resource managers. Estimates by the Food and Agricultural Organization [FAO] (2013), also show that women represent more than half of the labour required to produce the food consumed in developing countries. In sub-Saharan Africa, the figure is higher reaching three-quarters of the total labour force. The research of Brown, Feldstein, Haadad, Pena and Quisumbing (2001) also correspond to the findings of this study as they also found that African women perform most of the work related to some agricultural tasks e.g. hoeing, weeding, storage operations and processing. In doing so, they contribute to national agricultural output, maintenance of the environment and family food security. Studies of Nnadozie and Ibe (as cited in Odurukwe, Matthews-Njoku and Ejiogu-Okereke, 2006) found that the involvement of women in agriculture has attracted greater attention in recent years because of the recognition that women play very significant roles in agricultural production, processing and utilization thus corroborating the high percentage of women who due to their marital status have correspondingly large household sizes and therefore a number of people to cater for.

The major type of crop agribusiness identified in this study was that involving the production, processing and marketing of the cassava crop *manihot esculenta*. This agrees with Makinwa (1981) who described the economy of Edo state as one based on farming, with the main food crops being yams, cassava, plantains, and cocoyams, as well as beans, rice, okra, peppers, and gourds. The women seemed to concentrate on Cassava because of its tolerability to adverse weather condition and ease of cultivation. Crops like Bush mango

(I*rvingiagabonnensis)*, Yam (*Dioscorea spp.)*, Maize (*Zea mays)*, Groundnut (A*rachis hypogea*) and Mango(*Mangifera indica*)which also have economic potential are relegated to the background perhaps due to a lack of education on ways to exploit the potentials in these crops maximally.

Marketing crop agribusiness seems to generate the highest returns compared to production and processing crop agribusiness. This may be due to the fact that the risks involved in marketing is somewhat reduced. Crop agribusiness marketers are able to buy from producers and processors who are eager to sell off because of the shelf life of the produce leading them to sell at prices that are unrealistic. The marketer ends up with the higher profit. This view is supported by Neven, Odera, Reardon and Wang (2009) whose research on Annies project show that While most farmers in the traditional channel sold to brokers and received a price that allowed them at best to break even, farmers delivering to the supermarket channel had considerably higher gross profit margins. This resulted in strong growth for farmers delivering to the supermarket channel who doubled the size of their operations within five years. Theaverage returns as found in this study indicate low profitability crop agribusinesses translating to stagnancy in poverty rates of the women. The returns are just a little over the break-even point and what is left could hardly sustain a family leading to a state of women involved in agribusiness remaining poor. As defined by the World Bank (1996a) poverty is a lack of command over the basic needs of the people. The world bank went further to state that the inability of the rural population to meet their basic needs of life which include quality housing, clothing, balanced diet, education, electricity supply, water and involvement in political activities that decides the condition of the people amount to rural poverty. With the kind of gross margins

found in this research, the reason for the poverty rate among women involved in crop agribusiness is not far-fetched.

Results of the ranking of the mean weighted discrepancy scores of the agricultural education needs of women in production, processing and marketing crop agribusiness in Edo state reveals that tasks such as sourcing fund for the enterprise, ability to form strong alliances with women groups, formulating goals for the business enterprise, reconciling sales and production cost to ascertain profit or loss, storage methods and market information i.e. areas of surplus/areas of need represent the Agricultural Education needs of the women in that order. This is supported by studies by Yusuf, Masika and Ighodaro (2013) on Agricultural information needs of rural women farmers in Nkonkobe municipality: the extension challenge. In the study, the women farmers believed that economic empowerment was an all-embracing economic, social, cultural and political activity that makes them relevant and recognized in the community. To them, being economically empowered implied that they are able to support their households with nutritious foods, good education, health care and comfortably perform their social functions. Also to support findings from this study is a research on training needs of women in agriculture in Delta and Edo states of Nigeria by Ikeoji (2008) which also revealed that the women needed training in planting and post planting operations also there was a dire need to train the women in processing, credit procurement techniques and marketing of farm produce. According to Ukonze and Olaitan (2010) in a study on the competency improvement needs of women in agriculture in processing cocoyam into flour and chips for food security in South Eastern Nigeria, it was also discovered that improvements were needed in planning and the processing itself. Findings from the study also revealed that improvement was also needed in marketing by women in agriculture for marketing flour and chips for food security. The study by

Ifeanyieze and Okeme (2014) to ascertain the entrepreneurial competency improvement needs of women in Agriculture in processing African yam bean seeds for food security in the North central states of Nigeria also support the findings of this study as it was discovered that the women in the study area were found deficient in 13 competency items in planning, 16 in processing, 6 in storage and 7 in marketing of yam bean. Ndifon, Patrick and Idiku (2012) also assessed the extension education needs of women farmers in South-South Nigeria and found that the respondents needed training in several areas of skill acquisition including equipment maintenance, working with the local government, Planning for retirement, equipment operation, building infrastructure, labour management, marketing products, pest management, increasing productivity, organizing and running meetings, maintaining environmental health and managing finances. These findings are also similar to those in this study.

According to Teo (1996), successful businesswomen have access to current technology, training, and other educational programs. Heins, Beaulieu and Altman (2010) also hypothesize that Annie's Project is increasing women's proficiency in five specific risk categories derived from the literature: marketing, financial, human resource, legal, and production. Results from Annie's project (as cited in Eggers, 2002) whose aim is to empower women to be better business partners through networks and by managing and organizing critical information has also shown about 67 percent of the women nationally reported farm income greater than $150,000. Annie's Project was designed specifically to empower women by providing the necessary tools and networks which are vital to running successful agribusinesses .This is proof that theses core areas of need, when looked into and provided for will bring about a turnaround in the profitability of the agribusinesses being undertaken by the rural women in Edo state.

Lack of storage facilities and inadequate capital topped the list of barriers militating against efficient use of Agricultural resources for profitable crop agribusinesses. 78.5, 89.8 and 99.1 percent respectively, High cost of processing equipment 80.1 percent, inadequate capital 95.0,94.4 and 98.6 percent respectively, marketing costs 97.3 percent, theft 70.4 percent, transportation costs 74.6 and 75.0 percent, lack of market information 68.0,77.2 and 94.6 percent respectively. This is in line with the UN women's watch (2012) that reported the following as part of challenges women in agriculturally related pursuits face ; Poor access to improved agricultural technologies that would reduce wastage of agricultural produce and damages which occur during picking & harvesting, low margins due to seasonality and high perishability of agricultural produce, poor access to storage, transport and communication facilities, poor knowledge of packing, grading, quality parameters and standards which reduces the shelf life of products ,multiplicity of laws, taxes, duties and regulatory authorities and impediments in the flow of credit from financial institutions to the food processing industry amongst others. This view is also shared by the UN general assembly (2011) whose studies have also revealed the challenges of women in agriculture to include but not limited to multiplicity of laws, taxes, duties and regulatory authorities and a lack of organized markets, market intelligence, weak database and poor pricing system for the marketing of agricultural produce leading to a situation where farmers have to face so many hardships and have to overcome several hurdles to get fair and just prices for their sweat.

There was a significant difference in the average returns among the production, processing and marketing agribusinesses as shown in the analysis of variance of the average returns on production, processing and marketing agribusiness. Therefore the null hypothesis which states that there is no significant difference in the average returns of the rural women

involved in the different sectors of crop agribusiness in Edo state was rejected. Significant difference also existed in the barriers to effective use of agricultural resources for profitable crop agribusinesses among those involved in production, processing and marketing agribusiness. Analysis of variance of the mean responses of the women showed a significant difference in the barriers faced by the women in marketing and processing, marketing and production and the processing and production agribusinesses. Therefore the null hypothesis which states that significant difference does not exist in the barriers faced by women in the different sectors of crop agribusiness was rejected.

Regression analysis shows that there was no significant relationship between the socio economic characteristics of the women in crop production, processing and marketing agribusinesses and their computed agricultural education needs. Analysis of variance of the socio economic characteristics of the women and their computed educational needs also showed no significant relationship. The mean responses of women on their agricultural education needs in production, processing and marketing agribusiness were also significantly different .Whereas women in crop production agribusiness had a greater need for capital and in formulating objectives for their crop agribusinesses, those in the processing crop agribusiness were more interested in forming alliances with women groups while the women in marketing crop agribusiness most pressing need had to do with storage methods and market information especially knowledge in the areas of surplus and areas of need. The analysis of variance carried out showed the mean responses to be significantly different at 5% level of significance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the procedures used in the study, the implication of the study, conclusions and recommendations.

Summary of research

This study assessed the agricultural education needs of rural women for crop agribusiness and poverty reduction in Edo state. Population of registered women involved in the production, processing and marketing agribusiness were obtained from the Edo state Agricultural development programme, ministry of Agriculture and natural resources and the ministry of commerce and industry. A total population of Two thousand, three hundred and forty nine (2,349) was got and proportionate stratified random sampling was used to obtain a representative sample for the study. The Yaro Yamane formula was employed to obtain a sample size of Seven hundred and eighty three (783) women for the study. Three different types of questionnaires each representing the three major sectors in crop agribusiness (production, processing and marketing) were utilized for this study. The instruments for the study were validated by a panel of experts comprising the supervisor, a lecturer in the department of Measurement and evaluation and an extension agent in the Edo state Agricultural Development Programme. The instrument was pilot tested on 10 respondents outside the study area. The reliability of the instruments was determined using the Cronbach's alpha method after being administered once to thirty women (ten from each agribusiness sector) in Ovia North East local government area of Edo state yielding alpha values of 0.87, 0.80 and 0.75 for the three instruments on production, processing and marketing respectively. Data was collected by the researcher duly assisted by extension agents of the Edo State Agricultural Development Programme. Out of Seven hundred and eighty

three (783) questionnaires administered, Seven hundred and fifty eight (758) were retrieved. Frequency distribution tables, simple percentages, and measures of central tendency, gross margin and regression analysis were used in the analysis of data. Significant difference was found in the educational needs of the women involved in the different sectors of the crop agribusiness in Edo state.

Findings:

Assessment of agricultural education needs of women for crop agribusiness and poverty reduction in Edo state

1. A greater percentage of the women involved in crop agribusiness are married, between the ages of 40-49 years and have at least primary school certificate.
2. The major type of crop agribusiness the women in Edo state are involved in revolves around the cassava crop *manihot esculenta.*
3. Marketing crop agribusiness seems to generate the highest returns compared to production and processing crop agribusiness
4. The returns as found in this study indicate low profitability crop agribusinesses translating to stagnancy in poverty rates of the women.
5. The greatest Agricultural Education need of the women as found in this study include sourcing fund for the enterprise, ability to form strong alliances with women groups, formulating goals for the business enterprise, reconciling sales and production cost to ascertain profit or loss, storage methods and market information i.e. areas of surplus/areas of need.
6. Lack of storage facilities and inadequate capital also topped the list of barriers militating against efficient use of Agricultural resources for profitable crop agribusinesses.

7. There was a significant difference in the average returns among the production, processing and marketing agribusinesses.
8. Significant difference did exist in the barriers to effective use of agricultural resources for profitable crop agribusinesses among those involved in production, processing and marketing agribusiness.
9. There was no significant relationship between the socio economic characteristics of the women in crop production, processing and marketing agribusinesses and their computed agricultural education needs.
10. The mean responses of women on their agricultural education needs in production, processing and marketing agribusiness were also significantly different.

Conclusion

The conclusion of this study based on the findings obtained therein is that most of the rural women involved in agribusiness in Edo state have poor basic educational back ground which prevents them from progressing in their business. Their lack of education limits them on every index ,impeding their ability to seek information that will enhance their agribusiness and preventing them from taking crucial decisions necessary for effecting the needed changes that would bring about increased profitability in their crop agribusinesses. The women would also require education in core areas of Agribusiness particularly sourcing fund for their businesses and accessing information channels that will enhance their agribusinesses.

Implications of the study and for poverty reduction

The findings of this study have far reaching implications which include the following:

i. the woman is directly responsible for the nutrition and wellbeing of her family.

ii. Diversification of crop agribusiness to include other crops besides cassava would open up the market space and create more opportunities along different value chains that will lead to more profitable crop agribusinesses and a translating reduction in poverty.

iii. Women in agribusiness in Edo state comprise older women who would soon be inactive. If steps are not taken, a generation of farmers and women in agribusiness in Edo state would go into extinction without any replacement.

iv. Rural women's deficits in education have long-term implications for family well-being and poverty reduction. A woman's education is a key factor in determining a child's survival because Failure to address certain agricultural needs highlighted as a result of this study could lead to continued unprofitability of various agribusinesses thus discouraging active participation of youth in the enterprise and thereby increasing poverty rates in Edo State.

v. The Agricultural sector in Edo state may not be able to contribute its quota towards reducing the lingering rate of poverty in the State except the stakeholders in this case financial institutions, policy makers and curriculum planners proffer means of making funds available to women in agribusinesses, formulate the right policies and operate a kind of educational system that empowers the beneficiaries of such education to be highly productive.

Recommendations

The following recommendations have been proffered based on the findings of this study.

i. Training in Agricultural Education should be organized specifically for women in Edo State and such training should be structured such that differences among audience segments in their preferred learning styles and computed agricultural educational needs as generated from this study and patterned by gender, economic status, religion, and farming background, among other characteristics are taken in to consideration.

ii. Extension research should be intensified on crops other than the cassava crop with high economic potential focusing on value addition and efficient means of disseminating market news to farmers especially low income rural women groups. This step will save the rural women from exploitation by middlemen, strengthen their bargaining capacity and equip them for effective and productive investments in agribusiness.

iii. Opportunities should be developed to interact with women farmers in educational and other professional settings. Greater knowledge of this audience provides educators with a fuller understanding of the unique challenges and opportunities women farmers face and enhances the likelihood of creating programs that meet their needs.

iv. There should be collaboration between extension personnel and successful women and professionals in the field of Agribusiness in order to bring new approaches for programming to women farmers.

v. Regular needs assessments with both existing and emerging audiences should be encouraged using demographic data that identify population changes. Programs should be topically and pedagogically appropriate for these audiences. These could be done by

partnering with support organizations already offering programs that are well attended by women farmers.

vi. The curriculum of Agricultural Education in Nigerian universities should be geared towards producing graduates who will actively participate in agricultural business and or serve as extension agents with the experience and capacity to reach out to the rural women for better productivity.

Contribution to knowledge

This study has established the following:

i. The Agricultural Education needs of women involved in the production, processing and marketing crop agribusiness in Edo State.

ii. The average returns on investment in the various sectors of crop agribusinesses in Edo State

iii. The various crop agribusinesses undertaken by Edo state women.

iv. The Socio economic characteristics of women involved in crop agribusinesses in Edo State.

v. The relationship between the socioeconomic characteristics of women in cropagribusiness and their computed agricultural education needs.

vi. The barriers militating against efficient use of agricultural resources for profitable crop agribusinesses by Edo state women.

Suggestions for further research

The following suggestions have been made for further studies:

1. Comparative study of Agricultural Education needs of registered and unregistered women groups for crop agribusiness and poverty reduction in Edo State.

2. Assessment of Agricultural Education needs of Extension agents in Edo state for effective service delivery.
3. Perception of Agricultural Education needs of women farmers by Extension agents in Edo state.

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APPENDIX A

RESEARCH QUESTIONNAIRE (MARKETING)

Kindly assist in this research by completing this questionnaire. All information provided will be used for academic purposes and shall be treated with utmost confidentiality.

Thank you for your anticipated cooperation.

Instruction: Kindly circle your response or fill as may be appropriate.

SECTION A

1. Age: A. less than 30yrs [ ] B.30- 39yrs [ ] C.40 - 49yrs [ ] D. 50-59yrs [ ] E. Greater than 59 yrs. [ ].

2. Marital Status: A. Single [ ] B. Married [ ] C. widowed [ ] D. Separated [ ]

3. Household size: A. less than 5[ ] B. 5- 7[ ] C. greater than 8 [ ]

4. Level of Education: A. No schooling at all [ ] B. Pry School certificate [ ] C. Secondary school certificate [ ] D. Tertiary Education [ ].

5. No of years in the business: A. less than 5 years [ ] B.5-10years [ ] C. Greater than 10yrs [ ].

6. Type of Crop Agribusiness engaged in ……..

SECTION B

Instructions: This questionnaire lists a number of professional tasks that women involved in crop Agribusiness (marketing) should have knowledge about. .Kindly indicate your educational needs by rating the following tasks with respect to their importance to you in your Agribusiness and your ability to carry them out. Please rate each task two times :

1) Once for importance of the task to your Agribusiness.

2) Once for the current ability possessed for carrying out the task.

The following scale is provided to assist you rate each task.

Importance of the task

1 = Not important

2 = slightly important

3 = averagely important

4 = highly important

Ability possessed for carrying out the Task

1 = Not possessed at all

2 = slightly possessed

3 = averagely possessed

4 = highly possessed

S/N	Task	Importance of the task	Ability possessed
	Ability to:	**1 2 3 4**	**1 2 3 4**
1.	formulate objectives for the agro marketing enterprise		
2.	source fund for the enterprise		
3.	employ qualified persons at affordable cost to the enterprise		
4.	grading the products according to quality		
5.	determine price for different grades of produce		
6.	determine means of supplying to the buyers for profit maximization		
7.	reconcile sales with input costs to ascertain profit or loss		
8.	market information: Areas of surplus and areas of need.		
9.	storage methods		
10.	bargain for fair price		
11.	fumigate the store/warehouse to guard against storage pests.		
12.	access information channels that will enhance agribusiness		
13.	attend of agricultural conferences and shows		
14.	add value to products for better competitiveness		
15.	ability to diversify the agribusiness.		
16.	record business expenses.		
17.	record business receipts.		
18.	keep record of farm business inventory.		
19.	keep record of equipment maintenance information.		
20.	analyze business records for decision-making purposes.		
21.	interpretation of market reports.		
22.	determine when to market products.		
23.	calculate expected returns and profit from sales.		
24.	follow product price trends.		
25.	compare storage costs with selling at harvest.		
26.	access to extension agents		

SECTION C

Kindly supply relevant information in the boxes provided and tick N/A if not applicable.

1. Amount/Rent paid for business premise monthly/yearly[ ].

2. Amount paid on worker's wages monthly [ ].

3. Please list any fixed asset used in your crop agribusiness

S/N	Fixed assets	Qty	Year of purchase	Cost(N)
1.	**Vehicle/Truck**			
2.	**Store**			
3.				
4.				

4. Please indicate other variable cost items used in your crop Agribusiness and their cost.

S/N	Variable cost items	Cost(N)
1.	Packaging material	
2.	Security	
3.	Sundry bills/tax	
4.	Purchasing cost	
5.	Preservation/Storage cost	
6.	Others	

5. Please estimate quantity of produce sold daily and the cost.

S/N	Quantity	Cost(N)
1.		

SECTION D

The following are a list of possible challenges in the marketing crop agribusiness. Please tick yes or no against the items that correspond to the challenges you face.

S/N	CHALLENGES	YES	NO
1.	Lack of storage facility		
2.	Inadequate capital		
3.	Marketing costs		
4.	Poor patronage		
5	Lack of adequate transportation		
6	Lack of market information		

APPENDIX B

RESEARCH QUESTIONNAIRE (PROCESSING)

Kindly assist in this research by completing this questionnaire. All information provided will be used for academic purposes and shall be treated with utmost confidentiality.

Thank you for your anticipated cooperation.

Instruction: Kindly circle your response or fill as may be appropriate.

SECTION A

1. Age: A. less than 30yrs [ ] B.30- 39yrs [ ] C. 40 - 49yrs [ ] D. 50-59yrs [ ] E. Greater than 59 yrs. [ ].
2. Marital Status: A. Single [ ] B. Married [ ] C. widowed [ ] D. Separated [ ]
3. Household size: A. less than 5 [ ] B. 5- 7[ ] C. greater than 8 [ ]
4. Level of Education: A. No schooling at all [ ] B. Pry School certificate [ ] C. Secondary school certificate [ ] D. Tertiary Education [ ].
5. No of years in the business: A. less than 5 years [ ] B.5-10years [ ] C. Greater than 10yrs [ ].
6. Type of Crop Agribusiness engaged in ……..

SECTION B

Instructions: This questionnaire lists a number of professional tasks that women involved in crop Agribusiness (processing) should have knowledge about. Kindly indicate your educational needs by rating the following with respect to their importance to you in your Agribusiness and your knowledge of them. Please rate each task two times :

1) Once for importance of the task to your Agribusiness.
2) Once for the ability possessed to carry out the task.

The following scale is provided to assist you rate each task.

Importance of the task **Ability possessed for carrying out the Task**

1 = Not important **1 = No ability**

2 = slightly important **2 = slight ability**

3 = averagely important **3 = average ability**

4 = highly important **4 = high ability**

S/N		Importance of the task	Ability to carry out the task
		1 2 3 4	1 2 3 4
1.	Determine the type of processing enterprise to develop.		
2.	Formulate objectives for the processing enterprise		
3.	Source fund for the enterprise		
4.	Obtain a suitable site for the enterprise		
5.	Identify relevant resources for the enterprise		
6.	Employ qualified personnel for the enterprise		
7.	Survey market for acceptance of the processed product		
8.	Better farm produce processing Methods		
9.	Access to improved processing equipment.		
10.	Methods of storing farm produce		
11.	Proper hygiene/sanitation during processing		
12.	Knowledge of shelf life of processed products		
13.	Packaging methods to enhance sale and shelf life		
14.	Access to Information Channels that will enhance agribusiness growth		
15.	Ability to develop strong alliances with women groups		
16.	Attendance of agricultural conferences and shows		
17.	Value addition to products for better competiveness		
18.	Ability to diversify the agribusiness		
19.	Keeping record of farm business inventory.		
20.	Keeping record of equipment maintenance information.		
21.	Recording production and sales information.		
22.	Analyze farm records for decision-making purposes.		
23.	Reconcile sales & production cost to ascertain profit or loss		
24.	Access to market information		
25.	Access to extension agents		
26.	Interpreting market reports		

SECTION C

Kindly supply relevant information in the boxes provided and tick N/A if not applicable.

1. Amount/Rent paid for business premise monthly/yearly [ ].
2. Amount paid on worker's wages monthly [ ].
3. Please list any fixed asset used in your crop agribusiness

S/N	Fixed assets	Qty	Year of purchase	Cost(N)
1.	**Vehicle/Truck**			
2.	**Store**			
3.	**Equipment/machine**			
4.				

4 . Please indicate other variable cost items used in your crop Agribusiness and their cost.

S/N	Variable cost items	Cost(N)
1.	Packaging material	
2.	Security	
3.	Sundry bills/tax	
4.	Purchasing cost of produce for processing	
5.	Preservation/Storage cost	
6.	Additives/preservatives	
7.	Others	

6. Please estimate quantity of produce sold daily and the cost.

S/N	Quantity	Cost(N)
1.		

SECTION D

The following are a list of possible challenges in the processing crop agribusiness. Please tick yes or no against the items that correspond to the challenges you face.

S/N	CHALLENGES	YES	NO
1.	Lack of storage facility		
2.	Inadequate capital		
3.	Inadequate processing equipment		
4.	Poor patronage		
5	High cost of equipment & materials for processing		
6	Lack of market information		
7	Dissemination of research findings		
8	Others		

APPENDIX C

RESEARCH QUESTIONNAIRE (PRODUCTION)

Kindly assist in this research by completing this questionnaire. All information provided will be used for academic purposes and shall be treated with utmost confidentiality.

Thank you for your anticipated cooperation.

Instruction: Kindly circle your response or fill as may be appropriate.

SECTION A

1. Age: A. less than 30yrs [ ] B.30- 39yrs [ ] C. 40 - 49yrs [ ] D. 50-59yrs [ ] E. Greater than 59 yrs. [ ].
2. Marital Status: A. Single [ ] B. Married [ ] C. widowed [ ] D. Separated [ ]
3. Household size: A. less than 5 [ ] B. 5- 7[ ] C. greater than 8 [ ]
4. Level of Education: A. No schooling at all [ ] B. Pry School certificate [ ] C. Secondary school certificate [ ] D. Tertiary Education [ ].
5. No of years in the business: A. less than 5 years [ ] B.5-10years [ ] C. Greater than 10yrs [ ].
6. Type of Crop Agribusiness engaged in ……..

SECTION B

Instructions: This questionnaire lists a number of professional tasks that women involved in crop Agribusiness (production) should have knowledge about. Kindly indicate your educational needs by rating the following with respect to their importance to you in your Agribusiness and your knowledge of them. Please rate each task two times :

1) Once for importance of the task to your Agribusiness.

2) Once for the ability possessed for carrying out the task.

The following scale is provided to assist you rate each task.

Importance of the task

1 = Not important

2 = slightly important

3 = averagely important

4 = highly important

Ability possessed for carrying out the Task

1 = No ability

2 = slight ability

3 = average ability

4 = high ability

S/N	Task	Importance of the task	Ability possessed
		1 2 3 4	1 2 3 4
1.	Determine the type of farm enterprise to develop.		
2.	Determine whether to participate in government farm programs.		
3.	Formulate objectives/goals for the production enterprise		
4.	Source fund for the enterprise		
5.	Obtain a suitable site for the enterprise		
6.	Employing qualified personnel at affordable cost to the enterprise		
7.	Irrigation methods		
8.	Fertilizer application		
9.	Pesticide application		
10.	Assemblage of produce.		
11.	Storage of farm produce		
12.	Compare storage costs with selling at harvest.		
13.	Access to Information channels that will enhance agribusiness		
14.	Attendance of agricultural conferences and shows		
15.	Value addition to products for setter competitiveness		
16.	Ability to diversify the agribusiness		
17.	Selecting an appropriate farm business record system.		
18.	Keeping record of farm business inventory.		
19.	Keeping record of equipment maintenance information.		
20.	Recording production and sales information.		
21.	Analyze farm records for decision-making purposes.		
22.	Reconcile sales with production cost to ascertain profit or loss		
23.	Ability to select market places.		
24.	Access to market information		
25.	Access to extension agents		
26.	Interpreting market reports.		

SECTION C

Kindly supply relevant information in the boxes provided and tick N/A if not applicable.

1. Amount/Rent paid for business premise monthly/yearly [ ].

2. Amount paid on worker's wages monthly [ ].

3. Please list any fixed asset used in your crop agribusiness.

S/N	Fixed assets	Qty	Year of purchase	Cost(N)
1.	Vehicle/Truck			
2.	Store			
3.	Farm tools			
4.	Farm shed			
5.	Wheel barrow			
6.	Hoes			
7.	Cutlasses			
8.	Head pans			
9.	Others			

4. Please indicate other variable cost items used in your crop Agribusiness and their cost.

S/N	Variable cost items	Cost(N)
1.	Packaging material	
2.	Security	
3.	Sundry bills/tax	
4.	Purchasing cost of seed/planting material	
5.	Preservation/Storage cost	
7.	Herbicides	
8.	Pesticides	
9.	Fertilizer	
10.	Hiring of Farm machinery/equipment	
11.	Others	

7. Please estimate quantity of produce sold daily and the cost.

8.

S/N	Quantity	Cost(N)
1.		

SECTION D

The following are a list of possible challenges in the production crop agribusiness. Please tick yes or no against the items that correspond to the challenges you face.

S/N	CHALLENGES	YES	NO
1.	Lack of storage facilities		
2.	Inadequate capital		
3.	Lack of access to improved seeds/planting materials		
4.	Poor patronage		
5	Lack of adequate transportation		
6	Lack of market information		
7	Unavailability of extension agents		
8	Difficulty in renting/purchasing land		
9	Theft		

APPENDIX D

RELIABILITY OF THE INSTRUMENT (MARKETING)

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded[a]	0	.0
	Total	10	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.755	26

RELIABILITY OF THE INSTRUMENT (PROCESSING)

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	10	100.0
	Excluded[a]	0	.0
	Total	10	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.803	26

RELIABILITY OF THE INSTRUMENT (PRODUCTION)

Reliability

Scale: ALL VARIABLES

Case Processing Summary

	N	%
Valid	8	80.0
Excluded[a]	2	20.0
Total	10	100.0

Case Processing Summary

		N	%
Cases	Valid	8	80.0
	Excluded[a]	2	20.0
	Total	10	100.0

a. Listwise deletion based on all variables in the procedure

Reliability Statistics

Cronbach's Alpha	N of Items
.870	92

APPENDIX

PRODUCTION DATA OUTPUT

Frequency Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 30yrs	28	10.8	10.8	10.8
	30-39yrs	52	20.0	20.0	30.8
	40-49yrs	110	42.3	42.3	73.1
	50-59yrs	66	25.4	25.4	98.5
	greater than 59yrs	4	1.5	1.5	100.0
	Total	260	100.0	100.0	

Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	37	14.2	14.2	14.2
	Married	180	69.2	69.2	83.5
	Widowed	22	8.5	8.5	91.9
	Separated	21	8.1	8.1	100.0
	Total	260	100.0	100.0	

Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no schooling at all	30	11.5	11.7	11.7
	primary school certificate	74	28.5	28.9	40.6
	secondary school certificate	78	30.0	30.5	71.1
	tertiary education	74	28.5	28.9	100.0
	Total	256	98.5	100.0	
Missing	System	4	1.5		
Total		260	100.0		

No of Years in Business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 5	44	16.9	17.3	17.3
	5-10	135	51.9	52.9	70.2
	greater than 10	76	29.2	29.8	100.0
	Total	255	98.1	100.0	
Missing	System	5	1.9		
Total		260	100.0		

Type of Crop Agribusiness engaged in

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	oil palm	1	.4	.4	.4
	annual crop	3	1.2	1.2	1.5
	areable crop	1	.4	.4	1.9
	Beans	1	.4	.4	2.3
	bush mango	1	.4	.4	2.7
	Cassava	8	3.1	3.1	5.8
	cash crop	2	.8	.8	6.5
	Cashew	1	.4	.4	6.9
	Cassava	113	43.5	43.5	50.4
	cassava/cocoayam	1	.4	.4	50.8
	Citrus	1	.4	.4	51.2
	Cocoa	3	1.2	1.2	52.3
	Citrus	1	.4	.4	52.7
	Groundnut	1	.4	.4	53.1
	Leafy	1	.4	.4	53.5
	Maize	25	9.6	9.6	63.1
	Melon	2	.8	.8	63.8
	Mixed	1	.4	.4	64.2
	mixed farming	1	.4	.4	64.6
	oil palm	5	1.9	1.9	66.5
	oil pam	1	.4	.4	66.9
	Okro	1	.4	.4	67.3
	Pepper	4	1.5	1.5	68.8
	Perennial	2	.8	.8	69.6
	Pinaple	3	1.2	1.2	70.8
	Pineapple	3	1.2	1.2	71.9
	Plantain	39	15.0	15.0	86.9
	plantain/cassava	1	.4	.4	87.3
	Rice	1	.4	.4	87.7
	Vegetable	1	.4	.4	88.1
	Yam	31	11.9	11.9	100.0
	Total	260	100.0	100.0	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
b1i	260	1	4	3.72	.615
b2i	259	1	4	3.50	.837
b3i	259	1	4	3.57	.725
b4i	260	1	4	3.62	.678
b5i	260	1	4	3.38	.846
b6i	259	1	4	3.28	.988
b7i	259	1	4	2.73	1.263
b8i	260	1	4	3.07	1.192
b9i	260	1	4	3.01	1.127
b10i	260	1	4	3.27	.978
b11i	259	1	4	3.35	.938
b12i	258	1	4	3.28	.975
b13i	260	1	4	3.51	.827
b14i	260	1	4	3.36	.938
b15i	258	1	4	3.23	1.065
b16i	259	1	4	3.08	1.060
b17i	260	1	4	3.20	1.049
b18i	259	1	4	3.27	1.039
b19i	260	1	4	3.18	1.075
b20i	260	1	4	3.40	.927
b21i	258	1	4	3.32	.967
b22i	259	1	4	3.50	.814
b23i	259	1	4	3.28	1.057
b24i	259	1	4	3.58	.790
b25i	259	1	4	3.58	.838
b26i	257	1	4	3.21	.998
b27i	258	1	4	3.21	1.007
Valid N (listwise)	251				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
b1a	259	1	4	3.08	1.031
b2a	259	1	4	2.99	1.008
b3a	259	1	4	2.85	1.068
b4a	259	1	4	2.67	1.140
b5a	258	1	4	2.82	1.084
b6a	258	1	4	2.57	1.132
b7a	258	1	4	2.32	1.164
b8a	259	1	4	2.54	1.145
b9a	260	1	4	2.68	1.091
b10a	260	1	34	3.02	2.212
b11a	259	1	4	2.76	1.113
b12a	258	1	4	2.78	1.087
b13a	260	1	4	2.82	1.084
b14a	258	1	4	2.74	1.140
b15a	259	1	4	2.67	1.109
b16a	260	1	4	2.57	1.086
b17a	260	1	4	2.55	1.140
b18a	259	1	4	2.76	1.137
b19a	260	1	4	2.72	1.174
b20a	260	1	4	2.88	1.081
b21a	257	1	4	2.78	1.083
b22a	260	1	4	3.02	1.011
b23a	259	1	4	2.76	1.070
b24a	258	1	4	3.00	1.015
b25a	259	1	4	2.89	1.144
b26a	259	1	4	2.65	1.062
b27a	258	1	4	2.71	1.160
Valid N (listwise)	246				

d1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	204	78.5	79.7	79.7
	2	52	20.0	20.3	100.0
	Total	256	98.5	100.0	
Missing	System	4	1.5		
Total		260	100.0		

d2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	246	94.6	95.0	95.0
	2	13	5.0	5.0	100.0
	Total	259	99.6	100.0	
Missing	System	1	.4		
Total		260	100.0		

d3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	135	51.9	52.1	52.1
	2	124	47.7	47.9	100.0
	Total	259	99.6	100.0	
Missing	System	1	.4		
Total		260	100.0		

d4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	149	57.3	57.5	57.5
	2	110	42.3	42.5	100.0
	Total	259	99.6	100.0	
Missing	System	1	.4		
Total		260	100.0		

d5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	194	74.6	74.6	74.6
	2	66	25.4	25.4	100.0
	Total	260	100.0	100.0	

d6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	176	67.7	68.0	68.0
	2	83	31.9	32.0	100.0
	Total	259	99.6	100.0	
Missing	System	1	.4		
Total		260	100.0		

d7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	112	43.1	43.2	43.2
	2	147	56.5	56.8	100.0
	Total	259	99.6	100.0	
Missing	System	1	.4		
Total		260	100.0		

d8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	177	68.1	68.3	68.3
	2	82	31.5	31.7	100.0
	Total	259	99.6	100.0	
Missing	System	1	.4		
Total		260	100.0		

d9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	169	65.0	70.4	70.4
	2	71	27.3	29.6	100.0
	Total	240	92.3	100.0	
Missing	System	20	7.7		
Total		260	100.0		

APPENDIX F

PROCESSING DATA OUTPUT

Frequency Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less 30yrs	68	24.8	24.8	24.8
	30-39yrs	70	25.5	25.5	50.4
	40-49yrs	94	34.3	34.3	84.7
	50-59yrs	33	12.0	12.0	96.7
	greater than 59yrs	9	3.3	3.3	100.0
	Total	274	100.0	100.0	

Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	single	50	18.2	18.2	18.2
	married	151	55.1	55.1	73.4
	widowed	53	19.3	19.3	92.7
	seperated	20	7.3	7.3	100.0
	Total	274	100.0	100.0	

Household Size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 5	108	39.4	40.0	40.0
	5-7	114	41.6	42.2	82.2
	greater than 7	48	17.5	17.8	100.0
	Total	270	98.5	100.0	
Missing	System	4	1.5		
Total		274	100.0		

Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no schooling at all	44	16.1	16.1	16.1
	primary school certificate	84	30.7	30.7	46.7
	secondary school certificate	74	27.0	27.0	73.7
	tertiary education	72	26.3	26.3	100.0
	Total	274	100.0	100.0	

No of Years in Business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 5	101	36.9	36.9	36.9
	5-10	126	46.0	46.0	82.8
	greater than 10	47	17.2	17.2	100.0
	Total	274	100.0	100.0	

Descriptive Statistics

Type of Crop Agribusiness engaged in

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		5	1.8	1.8	1.8
	Banana	1	.4	.4	2.2
	C/M/YM	1	.4	.4	2.6
	Cassava	155	56.6	56.6	59.1
	Cocoa	1	.4	.4	59.5
	Cocoayam	1	.4	.4	59.9
	Crop	2	.7	.7	60.6
	Farming	1	.4	.4	60.9
	fish farming	1	.4	.4	61.3
	Fufu	24	8.8	8.8	70.1
	Gari	10	3.6	3.6	73.7
	GDNUT	14	5.1	5.1	78.8
	Maize	34	12.4	12.4	91.2
	Melon	1	.4	.4	91.6
	Pepper	2	.7	.7	92.3
	Plaintain	1	.4	.4	92.7
	Plantain	2	.7	.7	93.4
	Plantain	1	.4	.4	93.8
	Poultry	2	.7	.7	94.5
	Tomato	7	2.6	2.6	97.1
	Vegetable	3	1.1	1.1	98.2
	Yam	5	1.8	1.8	100.0
	Total	274	100.0	100.0	

	N	Minimum	Maximum	Mean	Std. Deviation
b1i	274	1	4	3.73	.678
b21	273	1	4	3.03	1.005
b3i	274	1	4	3.55	.745
b4i	273	1	4	3.35	1.065
b5i	274	1	4	3.16	.900
b6i	274	1	4	2.78	1.208
b7i	274	1	4	2.96	.983
b8i	274	1	4	3.37	.885
b9i	274	1	4	3.51	.822
b10i	273	1	4	3.40	.906
b11i	274	1	4	3.32	.940
b12i	274	1	4	2.40	1.051
b13i	273	1	4	2.71	1.273
b14i	274	1	4	3.58	.827
b15i	273	1	4	3.32	.930
b16i	272	1	4	2.87	1.192
b17i	273	1	4	2.41	1.198
b18i	260	1	4	2.92	1.163
b19i	267	1	4	2.71	1.279
b20i	271	1	4	2.87	1.057
b21i	272	1	4	3.17	1.025
b22i	271	1	4	2.51	1.333
b23i	271	1	4	3.54	.897
b24i	271	1	4	2.85	1.304
b25i	272	1	4	3.53	.948
b26i	272	1	4	2.30	1.293
b27i	271	1	4	2.22	1.122
Valid N (listwise)	250				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
b1a	273	1	4	3.28	.946
b2a	274	1	4	2.65	.957
b3a	273	1	4	2.90	.911
b4a	274	1	4	3.13	1.120
b5a	273	1	4	2.85	.989
b6a	273	1	4	2.51	1.128
b7a	273	1	4	2.77	1.103
b8a	272	1	5	3.14	1.064
b9a	273	1	3	3.08	.938
b10a	274	1	4	2.92	1.091
b11a	273	1	4	2.95	1.138
b12a	274	1	4	2.70	1.322
b13a	273	1	4	2.56	1.193
b14a	273	1	4	3.06	1.093
b15a	271	1	4	2.24	1.021
b16a	274	1	4	2.44	1.051
b17a	272	1	4	2.57	1.207
b18a	260	1	4	2.72	1.091
b19a	272	1	4	2.28	1.114
b20a	271	1	4	2.51	1.054
b21a	272	1	4	2.88	1.140
b22a	272	1	4	2.31	1.230
b23a	272	1	4	2.97	1.101
b24a	272	1	4	2.53	1.230
b25a	272	1	4	3.35	1.030
b26a	272	1	4	2.03	1.045
b27a	272	1	4	2.01	.957
Valid N (listwise)	256				

Frequency Table

d1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	239	87.2	89.8	89.8
	2	27	9.9	10.2	100.0
	Total	266	97.1	100.0	
Missing	System	8	2.9		
Total		274	100.0		

d2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	255	93.1	94.4	94.4
	2	15	5.5	5.6	100.0
	Total	270	98.5	100.0	
Missing	System	4	1.5		
Total		274	100.0		

d3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	211	77.0	78.1	78.1
	2	59	21.5	21.9	100.0
	Total	270	98.5	100.0	
Missing	System	4	1.5		
Total		274	100.0		

d4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	211	77.0	78.1	78.1
	2	59	21.5	21.9	100.0
	Total	270	98.5	100.0	
Missing	System	4	1.5		
Total		274	100.0		

d5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	213	77.7	80.1	80.1
	2	53	19.3	19.9	100.0
	Total	266	97.1	100.0	
Missing	System	8	2.9		
Total		274	100.0		

d6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	206	75.2	77.2	77.2
	2	61	22.3	22.8	100.0
	Total	267	97.4	100.0	
Missing	System	7	2.6		
Total		274	100.0		

d7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	186	67.9	69.1	69.1
	2	83	30.3	30.9	100.0
	Total	269	98.2	100.0	
Missing	System	5	1.8		
Total		274	100.0		

APPENDIX G

MARKETING DATA OUTPUT

Frequency Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 30yrs	16	7.1	7.1	7.1
	30-39yrs	49	21.9	21.9	29.0
	40-49yrs	95	42.4	42.4	71.4
	50-59yrs	63	28.1	28.1	99.6
	greater than 59yrs	1	.4	.4	100.0
	Total	224	100.0	100.0	

Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	22	9.8	9.8	9.8
	Married	120	53.6	53.6	63.4
	Widowed	55	24.6	24.6	87.9
	Separated	27	12.1	12.1	100.0
	Total	224	100.0	100.0	

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 5	74	33.0	33.3	33.3
	5-10	128	57.1	57.7	91.0
	greater than 10	20	8.9	9.0	100.0
	Total	222	99.1	100.0	
Missing	System	2	.9		
Total		224	100.0		

Household Size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 5	27	12.1	12.7	12.7
	5-7	139	62.1	65.6	78.3
	greater than 8	46	20.5	21.7	100.0
	Total	212	94.6	100.0	
Missing	System	12	5.4		
Total		224	100.0		

Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no school at all	74	33.0	33.0	33.0
	primary school certificate	98	43.8	43.8	76.8
	secondary school certificate	52	23.2	23.2	100.0
	Total	224	100.0	100.0	

No of Years of Business

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 5	74	33.0	33.3	33.3
	5-10	128	57.1	57.7	91.0
	greater than 10	20	8.9	9.0	100.0
	Total	222	99.1	100.0	
Missing	System	2	.9		
Total		224	100.0		

Type of Crop Agribusiness engaged in

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	caasava/yam	1	.4	.4	.4
	Cassava	61	27.2	27.2	27.7
	cassava/cocoayam	1	.4	.4	28.1
	cassava/plantain	7	3.1	3.1	31.2
	cassava/yam	5	2.2	2.2	33.5
	Cocoayam	2	.9	.9	34.4
	Garri	71	31.7	31.7	66.1
	Maize	3	1.3	1.3	67.4
	Melon	1	.4	.4	67.9
	Pepper	5	2.2	2.2	70.1
	Pinaple	1	.4	.4	70.5
	Pineapple	50	22.3	22.3	92.9
	Plantain	8	3.6	3.6	96.4
	Tomato	5	2.2	2.2	98.7
	Yam	3	1.3	1.3	100.0
	Total	224	100.0	100.0	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
b1i	224	1	4	3.83	.572
b2i	224	1	4	3.59	.716
b3i	224	1	4	2.69	1.136
b4i	224	1	4	3.17	.960
b5i	224	1	4	3.01	.801
b6i	224	2	4	3.84	.484
b7i	224	1	4	2.41	1.250
b8i	224	1	4	3.20	.955
b9i	224	1	4	3.77	.668
b10i	224	1	4	3.34	.869
b11i	224	1	4	2.83	1.145
b12i	224	1	4	2.54	1.342
b13i	224	1	4	2.50	1.395
b14i	224	1	4	2.35	1.150
b15i	224	1	4	2.91	1.324
b16i	224	1	4	2.42	1.250
b17i	224	1	4	1.98	1.327
b18i	224	1	4	2.57	1.357
b19i	224	1	4	3.08	1.306
b20i	223	1	4	2.78	1.277
b21i	223	1	4	1.96	1.311
b22i	223	1	4	2.79	1.285
b23i	223	1	4	1.92	1.301
b24i	223	1	4	3.12	1.261
b25i	223	1	4	3.04	1.189
b26i	223	1	4	3.10	1.270
b27i	223	1	4	2.88	.990
Valid N (listwise)	223				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
b1a	223	1	4	3.41	.945
b2a	223	1	4	3.57	.902
b3a	223	1	4	2.59	1.178
b4a	223	1	4	2.95	.985
b5a	223	1	4	2.90	1.000
b6a	223	1	4	3.48	.832
b7a	223	1	4	2.14	1.038
b8a	219	1	4	2.42	1.044
b9a	217	1	4	2.70	1.257
b10a	219	1	4	2.86	1.137
b11a	219	1	4	2.99	1.232
b12a	219	1	4	2.40	1.194
b13a	219	1	4	2.36	1.113
b14a	219	1	4	1.60	.895
b15a	219	1	4	2.41	1.147
b16a	219	1	4	2.53	1.015
b17a	219	1	4	1.84	1.216
b18a	219	1	4	2.05	1.136
b19a	219	1	4	2.37	1.194
b20a	219	1	4	2.15	1.255
b21a	219	1	4	1.95	1.214
b22a	219	1	4	2.37	1.326
b23a	219	1	4	1.81	1.195
b24a	217	1	4	2.67	1.205
b25a	218	1	4	2.48	1.048
b26a	219	1	4	3.05	1.330
b27a	219	1	4	2.67	.944
Valid N (listwise)	214				

d1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	218	97.3	99.1	99.1
	2	2	.9	.9	100.0
	Total	220	98.2	100.0	
Missing	System	4	1.8		
Total		224	100.0		

d2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	218	97.3	98.6	98.6
	2	3	1.3	1.4	100.0
	Total	221	98.7	100.0	
Missing	System	3	1.3		
Total		224	100.0		

d3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	215	96.0	97.3	97.3
	2	6	2.7	2.7	100.0
	Total	221	98.7	100.0	
Missing	System	3	1.3		
Total		224	100.0		

d4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	218	97.3	98.6	98.6
	2	3	1.3	1.4	100.0
	Total	221	98.7	100.0	
Missing	System	3	1.3		
Total		224	100.0		

d5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	210	93.8	95.0	95.0
	2	11	4.9	5.0	100.0
	Total	221	98.7	100.0	
Missing	System	3	1.3		
Total		224	100.0		

d6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	210	93.8	94.6	94.6
	2	12	5.4	5.4	100.0
	Total	222	99.1	100.0	
Missing	System	2	.9		
Total		224	100.0		

d7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	222	99.1	99.1	99.1
	2	2	.9	.9	100.0
	Total	224	100.0	100.0	

APPENDIX H

AVERAGE COST ANALYSIS IN PRODUCTION

	N	Minimum	Maximum	Mean	Std. Deviation
c31	30	4	5000000	639188.47	969599.302
c32	24	1500	800000	157804.17	256863.580
c33	37	1500	800000	47775.68	138561.151
c34	61	1500	550000	26945.90	71606.111
c35	187	850	112000	11338.24	10773.042
c36	219	750	50000	6644.06	8241.694
c37	242	700	48000	5255.79	6116.638
c38	120	0	32000	5679.17	5503.916
c39	72	150	24000	6030.56	6403.199
c41	77	350	40000	6709.74	7351.535
c42	43	600	40000	6083.72	6894.155
c43	32	500	150000	17320.31	36147.297
c44	104	500	150000	14850.48	21115.207
c45	68	500	50000	13404.26	11511.613
c46	101	1000	120000	10483.96	16006.943
c47	149	500	130000	7439.60	14058.683
c48	86	350	120000	13633.72	16844.289
c49	60	1300	120000	29813.33	273
c410	35	800	150000	39794.29	39824.305
Daily Sales	252	20	875000	74593.10	111952.223
Valid N (list wise)	0				

AVERAGE COST ANALYSIS IN PROCESSING

	N	Minimum	Maximum	Mean	Std. Deviation
c31	12	3000	250000	114833.33	97371.672
c32	64	60	1200000	58451.72	156920.866
c33	186	5	950000	80950.03	131310.312
c41	89	750	20000	3603.93	3762.526
c42	10	1000	10000	2800.00	3794.733
c43	64	1000	10000	4976.56	1764.801
c44	188	3	800000	29603.76	71003.143
c45	29	300	50000	11272.41	16058.863
c46	8	1500	25000	7875.00	9575.825
c47	3	1500	110000	43833.33	58043.805
Daily Sales	233	3000	95000	31572.10	19796.494

AVERAGE COST ANALYSIS IN MARKETING

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
c31	22	30	65000	27266.36	21332.934
c32	32	30	250000	48290.50	57914.258
c41	0				
c42	4	3000	65000	29500.00	25839.247
c43	60	3	75000	16635.05	20294.233
c44	74	3	250000	27555.45	39340.383
c45	0				
c46	101	3600	75000	20947.52	14542.218
Daily Sales	120	3600	250000	24947.50	28110.311
Valid N (listwise)	0				

Mean weighted Discrepancy Scores for production, processing, and marketing agribusiness

MeanIMK	DSCMK	MWDSCMK	MeanIPS	DSCPS	MWDSCPS	MeanIPD	DSCPD	MWDSCPD
3.83	0.472	1.80776	3.73	0.462	1.72326	3.72	0.579	2.15388
3.59	0.014	0.05026	3.03	0.389	1.17867	3.5	0.536	1.876
2.69	0.145	0.39005	3.55	0.701	2.48855	3.57	0.832	2.97024
3.17	0.251	0.79567	3.35	0.213	0.71355	3.62	1.021	3.69602
3.01	0.103	0.31003	3.16	0.33	1.0428	3.38	0.579	1.95702
3.84	0.566	2.17344	2.78	0.227	0.63106	3.28	0.721	2.36488
2.41	0.249	0.60009	2.96	0.178	0.52688	2.73	0.402	1.09746
3.2	0.793	2.5376	3.37	0.214	0.72118	3.07	0.582	1.78674
3.77	1.112	4.19224	3.51	0.432	1.51632	3.01	0.326	0.98126
3.34	0.511	1.70674	3.4	0.485	1.649	3.27	-0.623	-2.03721
2.83	-0.142	-0.40186	3.32	0.378	1.25496	3.35	0.675	2.26125
2.54	0.127	0.32258	2.4	-0.246	-0.5904	3.28	0.531	1.74168
2.5	0.148	0.37	2.71	0.144	0.39024	3.51	0.701	2.46051
2.35	0.802	1.8847	3.58	0.465	1.6647	3.36	0.634	2.13024
2.91	0.573	1.66743	3.32	1.3	4.316	3.23	0.632	2.04136
2.42	-0.122	-0.29524	2.87	0.411	1.17957	3.08	0.588	1.81104
1.98	0.144	0.28512	2.41	-0.154	-0.37114	3.2	0.697	2.2304
2.57	0.687	1.76559	2.92	0.21	0.6132	3.27	0.614	2.00778
3.08	0.741	2.28228	2.71	0.423	1.14633	3.18	0.598	1.90164
2.78	0.724	2.01272	2.87	0.345	0.99015	3.4	0.602	2.0468
1.96	0.016	0.03136	3.17	0.296	0.93832	3.32	0.548	1.81936
2.79	0.512	1.42848	2.51	0.202	0.50702	3.5	0.379	1.3265
1.92	0.079	0.15168	3.54	0.631	2.23374	3.28	0.532	1.74496
3.12	0.502	1.56624	2.85	0.313	0.89205	3.58	0.584	2.09072
3.04	0.538	1.63552	3.53	0.172	0.60716	3.58	0.711	2.54538
3.1	0.044	0.1364	2.3	0.198	0.4554	3.21	0.577	1.85217
2.88	0.202	0.58176	2.22	0.203	0.45066	3.21	0.51	1.6371

APPENDIX J
OUTPUT OF HYPOTHESES

One way Hypothesis 1

FOR AVERAGE RETURNS

Descriptive

Returns

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Marketing	224	24156.78	22940.596	1626.216	20949.86	27363.71	3000	250000
Processing	274	31572.10	19796.494	1296.911	29016.87	34127.33	3000	95000
Production	260	74593.10	111952.223	7052.327	60703.82	88482.37	20	875000
Total	758	45264.56	73503.497	2810.476	39746.35	50782.77	20	875000

Test of Homogeneity of Variances

Returns

Levene Statistic	df1	df2	Sig.
85.069	2	681	.000

ANOVA

Returns

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.491E11	2	1.746E11	35.580	.000
Within Groups	3.341E12	681	4905992731.273		
Total	3.690E12	683			

Post Hoc Tests

Multiple Comparisons

Returns

Scheffe

(I) Class of agrobusiness	(J) Class of agrobusiness	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
marketing	Processing	-7415.319	6760.843	.548	-24000.62	9169.98
	Production	-50436.311*	6642.398	.000	-66731.05	-34141.57
processing	Marketing	7415.319	6760.843	.548	-9169.98	24000.62
	Production	-43020.992*	6365.845	.000	-58637.31	-27404.68
production	Marketing	50436.311*	6642.398	.000	34141.57	66731.05
	Processing	43020.992*	6365.845	.000	27404.68	58637.31

*. The mean difference is significant at the 0.05 level.

Returns

Scheffe

Class of agrobusiness	N	Subset for alpha = 0.05	
		1	2
marketing	199	24156.78	
processing	233	31572.10	
production	252		74593.10
Sig.		.531	1.000

Means for groups in homogeneous subsets are displayed.

Homogeneous Subsets

One way Hypothesis 2

CHALLENGES FACED

Descriptive6

Challenges

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Marketing	224	7.09	.790	.053	6.99	7.20	1	9
Processing	274	8.31	1.208	.073	8.16	8.45	6	13
Production	260	11.76	1.754	.109	11.55	11.98	7	17
Total	758	9.13	2.369	.086	8.96	9.30	1	17

Test of Homogeneity of Variances

Challenges

Levene Statistic	df1	df2	Sig.
109.647	2	755	.000

ANOVA

Challenges					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2915.047	2	1457.524	824.604	.000
Within Groups	1334.495	755	1.768		
Total	4249.542	757			

Post Hoc Tests

Multiple Comparisons

Challenges

Scheffe

(I) Class of agrobusiness	(J) Class of agrobusiness	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
marketing	Processing	-1.213*	.120	.000	-1.51	-.92
	Production	-4.668*	.121	.000	-4.97	-4.37
processing	Marketing	1.213*	.120	.000	.92	1.51
	Production	-3.455*	.115	.000	-3.74	-3.17
production	Marketing	4.668*	.121	.000	4.37	4.97
	Processing	3.455*	.115	.000	3.17	3.74

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Challenges

Scheffe

Class of agrobusiness	N	Subset for alpha = 0.05		
		1	2	3
marketing	224	7.09		
processing	274		8.31	
production	260			11.76
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

One way Hypothesis 4

FOR AGRICULTURAL EDUCATIONAL NEEDS

Descriptive

Agricultural Education needs

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Marketing	27	1.1106904	1.06851954	.20563668	.6879981	1.5333826	-.40186	4.19224
Processing	27	1.0692307	.93790523	.18049995	.6982078	1.4402537	-.59040	4.31600
Production	27	1.8701919	.94484077	.18183469	1.4964253	2.2439584	-2.03721	3.69602
Total	81	1.3500377	1.04132208	.11570245	1.1197824	1.5802929	-2.03721	4.31600

Test of Homogeneity of Variances

Agricultural Education needs

Levene Statistic	df1	df2	Sig.
2.452	2	78	.093

ANOVA

Agricultural Education needs

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	10.981	2	5.490	5.652	.005
Within Groups	75.767	78	.971		
Total	86.748	80			

Post Hoc Tests

Multiple Comparisons

Agricultural Education needs

Scheffe

(I) Class of Agrobusiness	(J) Class of Agrobusiness	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
marketting	processing	.04145963	.26824184	.988	-.6279413	.7108606
	production	-.75950148*	.26824184	.022	-1.4289025	-.0901005
processing	marketting	-.04145963	.26824184	.988	-.7108606	.6279413
	production	-.80096111*	.26824184	.015	-1.4703621	-.1315601
production	Marketing	.75950148*	.26824184	.022	.0901005	1.4289025
	processing	.80096111*	.26824184	.015	.1315601	1.4703621

Multiple Comparisons

Agricultural Education needs

Scheffe

(I) Class of Agrobusiness	(J) Class of Agrobusiness	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
marketting	processing	.04145963	.26824184	.988	-.6279413	.7108606
	production	-.75950148*	.26824184	.022	-1.4289025	-.0901005
processing	marketting	-.04145963	.26824184	.988	-.7108606	.6279413
	production	-.80096111*	.26824184	.015	-1.4703621	-.1315601
production	Marketing	.75950148*	.26824184	.022	.0901005	1.4289025
	processing	.80096111*	.26824184	.015	.1315601	1.4703621

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Agricultural Education needs

Scheffe

Class of Agribusiness	N	Subset for alpha = 0.05	
		1	2
processing	27	1.0692307E0	
marketing	27	1.1106904E0	
production	27		1.8701919E0
Sig.		.988	1.000

Means for groups in homogeneous subsets are displayed.

APPENDIX K

Regression Analysis

FOR PRODUCTION

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	No of Years in Business, Level of Education, Marital Status, Household Size, Age	.	Enter

a. All requested variables entered.

b. Dependent Variable: Agric education needs

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.458[a]	.210	-.023	.99722672

a. Predictors: (Constant), No of Years in Business, Level of Education, Marital Status, Household Size, Age

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.483	5	.897	.901	.503[a]
	Residual	16.906	17	.994		
	Total	21.388	22			

a. Predictors: (Constant), No of Years in Business, Level of Education, Marital Status, Household Size, Age

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.787	1.350		.583	.568
	Age	.524	.470	.569	1.116	.280
	Marital Status	-.574	.447	-.427	-1.282	.217
	Household Size	-.748	.616	-.590	-1.214	.241
	Level of Education	.084	.269	.090	.311	.760
	No of Years in Business	.906	.572	.614	1.583	.132

a. Dependent Variable: Agric education needs

FOR PROCESSING

Variables Entered/Removed

Model	Variables Entered	Variables Removed	Method
1	No of Years in Business, Level of Education, Marital Status, Household Size, Age[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Agric education needs

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.463[a]	.214	.017	.68457917

a. Predictors: (Constant), No of Years in Business, Level of Education, Marital Status, Household Size, Age

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.551	5	.510	1.089	.397[a]
	Residual	9.373	20	.469		
	Total	11.924	25			

a. Predictors: (Constant), No of Years in Business, Level of Education, Marital Status, Household Size, Age

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.010	.819		1.234	.232
	Age	-.046	.194	-.072	-.237	.815
	Maritaal Status	-.065	.190	-.074	-.342	.736
	Household Size	.551	.314	.461	1.755	.095
	Level of Education	.037	.195	.038	.188	.852
	No of Years in Business	-.438	.256	-.437	-1.713	.102

a. Dependent Variable: Agric education needs

b. Dependent Variable: Agric education needs

FOR MARKETING

Model Summary

Variables Entered/ Removed[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.490[a]	.240	.101	1.01284610

a. Predictors: (Constant), No of Years of Business, Marital Status, Level of Education, Household Size

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.116	4	1.779	1.734	.178[a]
	Residual	22.569	22	1.026		
	Total	29.685	26			

a. Predictors: (Constant), No of Years of Business, Marital Status, Level of Education, Household Size

b. Dependent Variable: Agric education needs

Coefficients

Variables Entered/ Removed[b]

Model	Variables Entered	Variables Removed	Method
1	No of Years of Business, Marital Status, Level of Education, Household Size[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: Agric education needs

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.883	1.884		1.000	.328
	Marital Status	.272	.298	.184	.911	.372
	Household Size	-.641	.528	-.273	-1.212	.238
	Level of Education	.151	.326	.096	.463	.648
	No of Years of Business	-.324	.353	-.175	-.918	.369

a. Dependent Variable: Agric education needs