

**A SURVEY OF THE FACTORS INFLUENCING THE  
EFFECTIVENESS OF EXTENSION EDUCATION SERVICES  
FOR FARMERS IN KAUGAMA LOCAL GOVERNMENT AREA,  
JIGAWA STATE**

**BY**

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## **Dedication**

This work is dedicated to late Mamman Goje (Madakin Kiri) may his gentle soul rest in perfect peace, ameen.

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## **List of Abbreviations/Acronyms**

- ADP- Agricultural Development Project
- AEP- Agricultural Extension Programme
- AFAB- African Fertilizer and Agribusiness Partnership
- AGRF- African Green Revolution Forum
- EA- Extension Agent
- EES- Extension Education Service
- FADU- Farmers Development Union
- FAO- Food and Agricultural Organisation
- FF- Farm Family
- FGN- Federal Government of Nigeria
- GDP- Gross Domestic Product
- IAR- Institute for Agricultural Research
- IAR&T- Institute for Agricultural Research & Training
- IFA- International Fertilizer Industry Association
- IITA- International Institute of Tropical Agriculture
- ILRI- International Livestock Research Institute
- ISFEAG- Interview Schedule for Extension Agent
- ICRISAT- International Crop Research Institute for Semi Arid Tropics
- LGA- Local Government Area
- NCRP- National Coordinated Research Project
- QUEFOFAR- Questionnaire For Farmers
- REFILS- Research Extension Farmer Input Linkage System
- SADS- Special Agricultural Development Schemes
- T&V- Training and Visit
- ZACAREP- Zamfara Comprehensive Agricultural Revolutionary Programme

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## Abstract

*In line with the framework of extension as an educational process, this study examined factors influencing the effectiveness of extension education services for farmers in Kaugama Local Government Area of Jigawa State. The objectives of the study were to identify the characteristics nature of the extension education services that influence its usage by farmers in the area, to determine farmers' characteristics that influence their decision in the use of extension education services, and to examine the challenges faced by the farmers in the utilization of extension education services in the area. The study adopted survey research design, and the population of the study was the 5,751 farmers of Kaugama Local Government Area who were registered for phone alerted distribution of fertilizer. However, a sample of 361 farmers were used as sample of the study drawn through the use of purposive or judgemental sampling from eight (8) farming communities of; Kaugama gari, Zaburan, Dakayyawa, Hadin, Marke, Garin-Galadima, Yalo and Chiromawa. The study used questionnaire and interview schedules as data collection instruments. Data was analyzed by the use of percentage and frequency count. The findings of the study has revealed factors which influences the effectiveness of extension education services in the area; these factors were; economic strength of individual farmer, availability of information on extension services, suitability of extension services to the agro-ecological circumstances, level of uncertainty related to the extension services others were farmers' level of education, exposure and prevailing social circumstances etc. The research further revealed numerous challenges experienced by farmers in the utilization of extension education services which includes; inadequate extension agents, exploitation on the part of extension service providers, corruption among extension agents, poor funding of Extension Services by government, lack of infrastructures, credit facilities and subsidy on new technologies, poor collaboration between extension providers/farmers associations, and inappropriateness of technologies introduce through extension process. The research recommend the need for a serious intervention by both State and Local Government to reactivate extension activities which is presently in a state of comma in the area due to virtual absence of field extension agents whose services are highly required. And extension education services need to be broaden in contents and scope beyond technology transfer, and Extension Agents need to exercise a more proactive and participatory role and serve as knowledge and information brokers.*

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

There is consensus among Nigerian policy makers, her development partners, and experts in Nigerian agriculture that the wealth of a country can substantially be derived from agricultural production. It is generally believed that the small scale farmer holds the key to the realization of this possibility. However, the average Nigerian small scale farmer is poor, non literate, and lacks access to most basic social amenities, as well as improved varieties of inputs and modern farming implements. The consequence of these has been low productivity. Yet, the agricultural sub-sector of the economy accounts for 41.5% of the country's Gross Domestic Product(GDP) (Olawunmi, 2007 cited in Umunna, 2002). This is in contrast to the -4.82% contribution of the oil sub-sector. The oil sub-sector accounts for over 95% of the nation's total revenue in 2006 (BusinessDay, 2007). The problem, according to Bello (2002), is that as many as 65% of the country's population are producing 41.5% of the GDP. This shows that the percentage of Nigerians engaged in agriculture is more than the world average of 45.7%. The implication of this is that the productivity of this sub-sector of the Nigerian economy is quite low. The consequence is that food production is not keeping pace with country's population growth rate. While the annual rate of population growth is estimated at between 2.5 & 3%, that of food production is between 1 & 1.5%. This has become consistent with many researches findings(Munyua's (n.d.), cited in Umunna, 2002) that while agricultural yields in developing countries continue to decline, despite technological innovations their population has continued to expand beyond food production capacities.

Surprisingly, this unfortunate development was inspite of the efforts by various stakeholders toward the attainment of food security especially within the rural communities. As such, this has attracted global effort and policy which receives attention and concern among local, national and international stakeholders of agriculture and rural development. This is also evident from the various effort directed at agricultural extension especially with the establishment of Agricultural Development Projects ( ADPs) in virtually all the thirty six ( 36) states in the Nigerian Federation.

Extension education is an educational process by which capabilities among people are developed to understand their problems and resources. It is utilized to make scientific methods available to the rural people, so that they can raise their agricultural production and their standard of living. Therefore, extension education plays a major role in bringing desirable changes in the life of the rural people.

An Extension Education learning system is a dynamic, non-formal system for developing and implementing programs. The system consist of numerous complementary and interactive components, each contributing to the success of the total system. The individual components are the organization's mission; situation analysis; target audiences; needs assessment; programme objectives; contents; learning strategies, and the non-formal learning system, which includes inputs evaluation and adjustment. Key support components of inputs include experience, reinforcement and integration. Other components vital to the total system include collaboration with learner groups and learner motivation.

Agricultural Extension is aimed at providing farmers with necessary education, skills and technical information to enable them to make effective farm management decisions to enhance their daily practices. An effective extension service, therefore, is an essential factor for the

accelerated development of agriculture in developing economies. In 1974, the Federal Government of Nigeria, in conjunction with the World Bank and & the then Northern Government, established enclave (pilot) Agricultural Development Projects at Funtua and Gusau. The increase in agricultural production achieved through the enclave Agricultural Development Projects (ADPs), encouraged the Nigerian Government to establish ADPs on a nation-wide basis, in all the States, with a focus on small-scale farmers. The ADPs, thus, became the extension arms of the state Ministries of Agriculture. The Training and Visit (T & V) extension methodology was adopted. The T & V system is a management procedure involving regular intensive training for village extension workers followed by a scheduled visit to farmers (Benor, 1979). Gradually, a unified extension approach which aimed at professionalizing extension duties to a level of helping farmers in raising production and increasing income was introduced. Thereby, each extension agent was expected to deal with the transfer of technology on all the agricultural sub-sectors (Unamma, 1989).

Nevertheless, reports have indicated that the performance of Nigerian farmers so far, have neither used nor absorbed most of the technologies being introduced to them (Atande, 1999). This appears to be the case, considering the findings of Yayock and Misari (1990) which showed that there existed a wide gap between farmers' improved technological yields and farmers' traditional technological yields. Regarding this scenario, the authors attributed this event to the gap between available agricultural information on improved practices and their use. This assertion was further corroborated by the Director General of International Fertilizer Industry Association (IFA), Charlotte Hebebrand who disclosed that fertilizer use in Africa remains startlingly low compared to other regions with an average use at around 10kg per hectare, a tenth of the global average. Yet African leaders have pledged in the 2006 Abuja Declaration to bridge this gap and increase

fertilizer use to 50kg/ha by 2015, a goal which has only been met in a very few countries. He made this known at the launching of a new campaign by the International Fertilizer Industry Association (IFA) to promote the importance of fertilizer access for African farmers as a means of bridging the current agricultural productivity gap on the continent ( Vanguard online newspaper 2014). Consequently, this unfortunate development within the agricultural sub-sector of the economy prompted this research work entitled “ A survey of the factors influencing the effectiveness of Extension Education Services for farmers in Kaugama Local Government Area of Jigawa State”. Kaugama Local Government Area is geographically located at 7:30 to 8:39 degrees east and between 11:10 to 11:39 north, with a total land area of 766 square kilometres. According to the 2006 National Population Census, the area has a population of 128,981 people. The people are predominantly farmers, with agriculture providing employment for about 75% of the active population. Most of the farmers engage in subsistence farming, large scale modern farming is very rare and crops commonly produced include maize, guinea corn, millet, groundnut, beans and rice. Farming in the area is both rain fed and through irrigation, the rain season is four to five month, from June to September/October. The area is within the Sahel savannah, with two distinct seasons of rainfall and dry season. The climate is influenced by two winds: the tropical maritime wind blowing from south west which is hot and humid bringing with it the rains and the tropical continental wind which blows from the north east bringing with it dry, cool and dusty air from the Sahara desert. The mean annual rainfall is between 470-1000mm, while temperatures ranges from 17-42 degrees Celsius. The vegetation in the area is just typical of the Sahel Savannah which is mainly grassy with shrubs. The soil is sandy and the area has abundant surface and underground water sources which support agricultural activities. River Hadejia passes through the area with streams at Mana, Yalo, Askandu, and Admingaso and

as such, this serves as a source of fishing in those axes of the Local Government Area. Also, it is pertinent to note that animal rearing and husbandry are among the economic activities in the area.

At this juncture is pertinent to note that it has been established that agriculture is the backbone of our rural economy. However, the agricultural sub sector of the economy was said to be bedevilled with quite number of challenges at the grass root level which make the productivity of the sector very low. Thus, our farmers were ill equipped and lack capacities, while government attention to the sector in terms of funding could be adjudged to be inadequate. And for the agricultural sub sector of the economy to take its rightful place and contribute to national development Extension Education Services must be accorded with due priority, for the fact that it play a vital roles in bringing desirable changes in the life of rural people. Thus, agricultura extension is aimed at providing farmers with necessary education, skills and technical information to enable them make an effective farm management decision to enhance their daily practices.

## **1.2 Statement of the Problem**

About 75% of the entire population of Kaugama rural communities are predominantly farmers (KGM-LEEDS,2008).And there is prevalence of reported cases of low productivity which most farmers in the area attributed it to infertility of the farm land due to annual continues farming, while others attributed it to wide gap between the available agricultural information on improved technologies and their use. This has become consistent with previous reports which indicated that the performance of Nigerian rural farmers so far, have neither used nor absorbed most of the technologies being introduced to them ( Atande, 1999 ). And this has further been corroborated by the Director General of IFA Charlotte (2014) who disclosed that fertilizer use in Africa has

remains startlingly low compared to other regions, with an average use at around 10kg per hectare, a tenth of the global average. Therefore, in the light of above situation within the agricultural sector in the area prompted this research work titled a survey of the factors influencing the effectiveness of Extension Education Services for farmers in Kaugama Local Government Area. The outcome of this research is geared toward addressing some of the factors which influenced farmers in the area to adopt extension services brought to them which is assumed would boost their productivity.

### **1.3 Objectives of the Study**

The broad objective of the study is to examine the factors influencing the effectiveness of extension education services for farmers in Kaugama Local Government Area of Jigawa State.

The specific objectives of the study included the following:

- i. To identify characteristics of extension education services that influence their usage by farmers in the area;
- ii. To determine farmers' characteristics influencing their decisions in the use of extension education services in Kaugama Local Government Area;
- iii. To examine the challenges faced in the utilization of extension education services by farmers in the area.

### **1.4 Research Questions**

The research questions for the study in examining the factors influencing the effectiveness of extension education services for farmers in Kaugama LGA, are as follows:

1. What are the characteristics' of extension education services that influence their usage by farmers in the area?

2. What are the farmers' characteristics influencing their decisions in the use of extension education services in Kaugama LGA?

3. What are the challenges faced in the utilization of extension education services by farmers in Kaugama Local Government Area?

### **1.5 Operational Definition of Terms**

The following terms are operationally defined in the context of the study:

**Survey**-Refers to a careful and thorough study of things (factors) with the aim of drawing realistic conclusions.

**Factors**- In this context, this refers to those things that influence the effectiveness of extension education services either positively or negatively.

**Influence**- This refers to the effect of the factors on farmers and which makes them behave in a particular way to an extension education service(s) introduced to them.

**Effectiveness**- This refers to how successfully an extension education service has produced an expected outcome after it has been introduced to the farmers.

**Extension Education**- This is the relatively non-formal way to disseminate useful research information and ideas to farmers in order to bring about changes that would improve their practices.

**Extension Education Services**- This refers to programmes for agricultural development which employ the extension methodology as a means of implementation.

## **1.6 Area of Study:Kaugama Local Government Area**

Kaugama Local Government Area was created in 1991 during the regime of president Ibrahim Badamasi Babangida , this development was seen as a turning point which could lead to socio economic development of the area. There are four districts in the LGA namely Kaugama, Dakaiyawa, Yalo, and Marke each headed by districts head (Hakimi), and under the districts there are 44 villages each with head (Bulama). It is located in the north eastern part of Jigawa State; it shares boundaries with Maigatari LGA from the north, Gagarawa LGA from the south, Malam Madori LGA from the south-east and with Birniwa at the north-east.

The LGA is geographically located at 7:30 to 8:38 degrees east and between 11:10 to 11:39 north, with a total area of 766 square kilometers. According to 2006 National Population Census the LGA has a population of 128,981 people. The people are predominantly farmers with agriculture providing employment for about 75% of the active population. Most of the farmers engaged in subsistent farming, large scale modern farming is very rare; crops commonly produced include maize, guinea corn, millet, groundnuts, beans and rice etc. Farming in the area is both rain fed and through irrigation, the rain season is four to five month from June to September/October. The area is within the Sahel savannah with two distinct seasons of rainfall and dry season. The climate is influenced by two winds, the tropical maritime wind blowing from south west which is hot and humid bringing with it the rains, the tropical continental wind blows from the north-east bringing with it dry, cool and dusty air from the Sahara desert. The mean annual rainfall is between 470-1000mm, while temperatures range from 17-42 degrees Celsius. The vegetation in the area is just typical of Sahel Savannah which is mainly grassy with shrubs. The soil is sandy, the area has abundant surface and underground water sources which support agricultural activities. River Hadejia passes through the LGA with streams at Mana, Yalo, Askandu and Admingaso as such this served as source of fishing in those axes of the

LGA. Also pertinent to note, is that animal rearing and husbandry is part of the economic activities in the area.

### **1.7 Scope and Delimitation**

This research work was restricted to a survey of factors influencing the effectiveness of Extension Education Services for farmers in Kaugama Local Government Area, also included determining farmers' characteristics that influence their decision in the use of extension education services, the characteristics nature of extension services that influence its usage by farmers, and to examine the challenges experiences in the utilization of extension services by farmers in the area.

There are about forty four (44) farming communities (villages) that make up the entire Local Government Area which were spread across the four (4) districts namely Kaugama, Dakayyawa, Marke and Yalo. This research work would be delimited to eight (8) communities i.e two (2) will be randomly selected from each of the four districts mentioned namely Kaugama, Zaburan, Dakayyawa, Hadin, Marke, Garin Galadima, Yalo and Chiromawa. Thus, the sample size of the study is delimited to a total number of 361 farmers selected from the eight villages who were registered for the phone alerted fertilizer distribution for the year 2014 planting season, using purposive or judgemental sampling.

### **1.8 Significance of the Study**

Considering the fact that the potentiality of the wealth of the country can maximally be derived from agricultural production, it is generally believed that the small-scale farmer holds the key to the realization of this possibility. However, it is strongly believed that the attitude of Nigerian farmers have neither benefited from nor familiarize themselves to the use of technologies

introduced to them (Atande, 1999). Consequently, this development has created a wide gap between available agricultural information on improved practices and their use.

This research work when completed would be significant to government and other stakeholders to understand those factors that influence the effectiveness of extension education services for farmers in Kaugama Local Government Area. It will also reveal those characteristics identified with farmers which influence their decision to utilize or not utilized the extension education services brought to them. Moreover, these research findings can be utilized by Government and voluntary agencies when formulating policies that relate to agriculture, especially those that actively participate in the provision of extension services in the area of this study.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

In this chapter some literatures relevant to the research problem have been reviewed which form the basis of this research work. Some of the sub-headings reviewed under this chapter include; theoretical framework of the study, methods of extension service delivery, stages by which farmers adopt practices through extension education, concept of extension education as offered by various scholars in the field of extension, Extension farmers' education, common extension education services for Nigerian farmers, empirical studies in extension education services delivery, and the main constraints limiting extension services delivery in Nigeria.

#### **2.1 Theoretical Framework of the Study**

This study is organised around the theory of factors that influence farmers to adopt technologies brought to them through extension process. According to Rogers and Shoemaker (1971) cited in Agwu (2004) conceptualized the innovation decision process to consist of four functions, viz. knowledge, persuasion, decision and confirmation. An examination of this four- staged adoption paradigm shows that for a farmer to adopt an innovation, there are variables pertaining not only to the farmer's personality but also related to the innovation and the method of information dissemination that influence farmers' response. They further observed that agricultural innovations vary considerably in their inherent characteristics, which to a large extent influence the decision of the farmers to participate. As a result, the farmer is more inclined to accept, and participate in, a recommended practice, if the practice is profitable; compatible with existing farming system; divisible; simple to use; and has relevance for his labour use, farm inputs, marketing, credit, community values and crop situation.

Purcell and Anderson (1997), observed that farmers would adopt new technologies and modify their resource use when they believe that the proposed change is relevant to their circumstances and can help them achieve their objectives. They further stated that the rate of adoption of a technology (using technology adoption as a proxy for any desirable change in resource use) by a farming population would depend on the characteristics of individual's, production circumstances, characteristics of the technology itself, socio-cultural characteristics of individual farmers and the speed with which the population is made aware of the technology and its application to local production systems.

Feder, Just and Zilberman (1986) stated that the adoption of technology by farmers is inevitably affected by many factors. They disclosed that adoption can be influenced by educating the farmers about such things as improved varieties, cropping techniques, optimal input use, prices and market conditions, more efficient methods of production management, storage, nutrition, etc. To do so, extension agents must be capable of more than just communicating messages to farmers. They must be able to comprehend an often complex situation, have the technical ability to spot and possibly diagnose problems, and possess insightful economic-management skills in order to advise on more efficient use of resources.

Byerlee and Van den Ban cited in Anderson and Gershon (2002) reported that effective extension involves adequate and timely access by farmers to relevant advice. However, while access to appropriate information is necessary to improve agricultural productivity, it is not sufficient. In general, farmers will adopt a particular technology if it suits their socioeconomic and agro ecological circumstances. The availability of improved technology, access to modern inputs and resources, and profitability at an acceptable level of risk are among the critical factors in the adoption process. Further, farmers often get information from a number of sources. Public

extension is one such source, but not necessarily the most efficient. Extension can increase the rate at which adoption occurs, but the extent and form that an extension service takes should be guided by considerations of cost-effectiveness and the nature of extension products. Thus, while extension, including that done in the public sector, can play an important role in improving the productive efficiency of the agricultural sector, the virtues and limitations of the alternative mechanisms need to be considered in assessing the cost-effectiveness of delivering information. Extension usually has maximal impact in the early stages of dissemination of, say, a new technology, when the informational disequilibrium (and the productivity differential) is the greatest. Over time, as increasing numbers of farmers become aware of a specific technological thrust, the impact of such extension diminishes, until the opportunity and need for more information-intensive technologies arise. The dynamic resolution of the information disequilibria associated with specific extension messages makes observing the impact of extension difficult. At the same time, the uneven flow of benefits from any particular extension message has significant implications from a policy and program design point of view. The cost-effectiveness of information delivery at a given point in time should thus be established in the light of current and future benefits and cost in order to justify the marginal resources allocated to delivering the information. Also market distortion and infrastructural bottlenecks further affect the adoption of new technology and can help or hinder the effectiveness of extension services. Again, from an operational point of view, the cost effectiveness of delivering a message must be considered within the prevailing policy and market environment. A restrictive environment has a high opportunity cost in terms of forgone benefits from extension advice, creating a divergence between potential and actual benefits. The prevailing policy regime thus has potentially important implications for an appropriate sequencing of policy interventions and program design.

Also Singh and Emechebe (1998) posited that the rate of adoption of a new technology is subject to its profitability and the degree of risk and uncertainty associated with it, the capital requirement, agricultural policies as well as the socio-economic characteristics of the farmers.

## **2.2 Method of Extension Education Delivery**

According to the FAO (1984) publications on agricultural extension, the extension education teaching methods are the tools and techniques used to create situations in which communication can take place between the rural people and the extension workers. They are the methods of extending new knowledge & skills to the rural people by drawing their attention towards them, arousing their interest & helping them to have a successful experience of the new practice. A proper understanding of these methods and their selection for a particular type of work are necessary.

One way of classifying the extension education teaching methods is according to their use & nature of contact. In other words, it depends on whether the methods are used for contacting people individually, in groups or in masses. Based on the nature of contact, according to Williams (1984), they are divided into 3 as follows:

**I. Individual-contact methods.** Extension methods under this category provide opportunities for face-to-face or person-to-person contact between the rural people and the extension workers. These methods are very effective in teaching new skills and creating goodwill between farmers and the extension workers.

**II. Group-contact methods.** Under this category, the rural people or farmers are contacted in a group which usually consists of 20 to 25 persons. These groups are usually formed around a common interest. These methods also involve a face-to-face contact with the people and provide

an opportunity for the exchange of ideas, for discussions on problems and technical recommendations and finally for deciding the future course of action.

**III. Mass or community-contact methods.** An extension worker has to approach a large number of people for disseminating a new information & helping them to use it, this can be done through mass-contact methods conveniently. These methods are more useful for making people aware of the new agricultural technology quickly.

A brief description of some of the extension methods which are commonly used by extension workers are given below.

**i. Farm & home visits:** Farm & home visits constitute the direct or face-to-face contact by an extension worker with the farmer or the members of his family. During these visits, information is exchanged or discussed. The visits may be to get acquainted with the problems of the farmers, or to organizational purposes. Such visits provide an opportunity for a two way communication.

**ii. Result demonstration:** Result demonstration is an educational test to prove the advantages of recommended practices & to demonstrate their applicability to the local condition. It is conducted by a farmer under the direct supervision of an extension worker. It is designed to teach others, in addition to the person who conducts the demonstration. It helps the farmers to learn by seeing & doing. This method can be used to show the superiority of practices, such as the use of fertilizers, insecticides & pesticides & high yielding varieties of seeds.

**iii. Method demonstration:** It is used to show the technique of doing things or carrying out new practices, e.g. preparing a nursery-bed, treating seed with insecticides & fungicides, line-sowing, taking a soil sample, grafting fruit trees, etc. This method is usually used for groups of people.

**iv. National demonstrations:** National demonstrations are the first-line demonstration, conducted by researchers on the farmers' fields to show how production can be increased per

unit of area & per unit of time. These demonstrations usually include the system of multiple cropping & the use of high-yielding varieties, along with the best package of practices. They were first initiated on a modest scale in 1965 & have now become a part of the agricultural production programme in the country.

**v. Group discussions:** All the farmers can not be contacted by extension workers individually because of their large number. It is convenient & feasible to contact them in groups. This method is commonly known as group discussion. It is used to encourage & stimulate the people to learn more about the problems that concern the community through discussion. It is a good method of involving the local people in developing local leadership & in deciding on a plan of action in a democratic way.

**vi. Exhibitions:** An exhibition is a systematic display of information, actual specimens, models, posters, photographs, and charts, etc in a logical sequence. It is organized for arousing the interest of the visitors in the things displayed. It is one of the best media for reaching a large number of people, especially illiterate & semi-illiterate people. Exhibitions are used for a wide range of topics, such as planning a model village, demonstrating improved irrigation practices, soil conservation methods, showing high-yielding varieties of seeds & plants, new agricultural implements & the best products of village industries.

**vii. General meetings:** These are usually held for passing on certain information to the people for future action. Extension workers give lectures to the people on certain pre-selected items of work, such as the celebration of Van mahotsav, a national festival Campaigns. Campaigns are used to focus the attention of people on a particular problem, e.g. rat control, village sanitation & plant protection, the production of rabi crops & family planning. Through this method, the

maximum number of farmers can be reached in the shortest possible time. It builds up community confidence & involves the people emotionally in a programme.

**viii. Tours & field days:** Conducted tours for farmers are used to convince them & to provide them with an opportunity of seeing the results of new practices, demonstration skills, new implements etc. & to give them an idea regarding the suitability & application of these things in their own area. Such tours may also be arranged to enable the rural people to visit places & institutions connected with the problems of rural life, such as research institutions, training institutions, agricultural universities, model villages, areas of advanced developments, leading private farms, exhibitions, & agricultural & cattle fairs.

**ix. Printed materials (literatures):** Newspapers, magazines, bulletins, leaflets, folders, pamphlets & wall news-sheets are another set of mass media for communicating information to a large number of literate people. They are used for communicating general & specific information on a programme of technology or a practice. Small folders, leaflets & pamphlets are used to give specific recommendations about a practice, such as the use of fertilizers, vegetable cultivation, green-manuring & the growing of individual crops, e.g. wheat, barley, gram & sugarcane.

**x. Radio:** It is a mass medium of communication & can reach a large number of people at any given time involving the least expense. Extension workers use the radio for communicating information on new methods & techniques, giving timely information about the control of crop pests & diseases, weather, market news, etc. For this purpose, talks, group discussions, folk-songs, dialogues & dramas are usually organized & aired through the radio.

**xi. Television:** It is one of the most powerful media of communication. It comes into vogue only in the recent years. It combines both audio & visual impact & is very suitable for the dissemination of agricultural information. It is more useful in teaching how to do a specific job.

**xii. Motion-pictures (movies):** Movies are an effective tool for arousing interest among the people, because they involve seeing, hearing, & action. They are the most suitable medium for drawing bigger audience; a film show can be followed by a discussion with the villagers.

**Xiii .Visual aids:** These are the tools of teaching through the sense of sight. They are supporting materials & they alone cannot generate learning. They should be considered only as tools that help to do a job in a better way. They are of different types, the commonly used among them includes: Posters, flannel-graphs, flash cards, puppets, slides & film-strips, models, bulletin boards, photographs, & black-boards.

For an effective use of extension-teaching methods, it is not enough to know these methods & their techniques. What is more important is the appropriate selection of a method or combination of methods for a particular situation. Infact, when a farmer is exposed to a new idea several times by different methods or a combination of methods, he is likely to accept it more quickly.

### **2.3 Stages by which farmers adopt practices through Extension Education**

Fliegel (1983) stated that Farmers learn about new practices through several stages. These stages are known as:

**(1) The awareness stage-** when an individual comes to know of a new practice but lacks the complete information;

**(2) The interest stage-** when he becomes interested in a new idea & wants to know more about it;

**(3) The evaluation stage-** when he mentally applies the new idea to his present situation & evaluates it;

**(4) The trial stage-** when he applies the new idea or practice on a small scale in order to determine its utility under his own situation, and

**(5)The Adoption stage-** when he decides to continue the full use of the practice. Thus, it is the cumulative affect on people through exposure to an idea repeatedly those results in action.

## **2.4 The Concept of Extension Education**

Various scientists have defined the term Extension according to their interest, experience and training. This term was first used in a customary way in U.S.A. Afterwards it was used by many countries. Extension education is used in various fields, such as Agriculture, Animal Husbandry, Health, Home Science, Industry, Cooperative and Forestry. Now, Extension Education is included in the syllabus of Graduate & post-graduate classes. Therefore, it is necessary to understand basic concept of Extension Education for those who are associated with it in some way or the other. To fully understand the nature of extension education, it is important to study various definitions given by different scholars as cited in Jitendra (2000)

According to Kelsey & Harne (1963), defined extension education as an out of school system of education in which adult and young people learn by doing. It is a partnership between the government and the people, which provides service and education designed to meet the people. Its fundamental objective is the development of the people.

While Leagans (1961) sees extension education as a process of teaching rural people how to live better by learning ways that improve their farm, home and community institutions. Similarly, Ensminger (1961), sees extension education as a programme and a process of helping village people to help themselves, increase their production and to raise their general standard of living.

Sanoria (1986), defined extension education as a professional method of non-formal education aimed at inducing behavioural changes in the farmers for increasing their income through increased production and productivity by establishing firm linkages with research for solving

farmer's problems ensuring adequate and timely supply of inputs and using proven methods of communication for speeding of the process of diffusion and adoption of innovations.

Dahama (1973) stated that extension education is an educational process to provide knowledge to the rural people about the improved practices in a convincing manner and help them to take decision within their specific local conditions.

While Swanson (1984), cited in FAO publication defined extension as a service or system which assists farm people, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income, bettering their levels of living and lifting the social and educational standards of rural life.

Fisher (1983) defined extension as a system of education extending beyond the classroom to individuals on the farms and is available to every member of the family. Fisher, thus, analyzed extension in terms of family approach system whereby all members of the family are taking into consideration in planning extension programme.

However, Rambhai (1958) sees extension as a two-channel; it brings scientific information to the village people, and also takes the problems of the village people to the scientific institution for solution. It is a continuous educational process, in which both learner and teacher contribute and receive.

While Vanden Ban and Hawkin (1988), defined extension as involving the conscious use of communication of information to help people form sound opinions and make good decisions. They explained extension systematically as a process which help farmers to analyze their present and expected future situations, helps farmers to become aware of the problems, which can arise in such an analysis, increase knowledge and develops into problems and help to structure farmers' existing knowledge, help farmers to acquire specific knowledge related to certain

problems, solutions and their consequences so that they can act on possible alternatives, help farmers to evaluate and improve their own opinion-forming and decision-making skills.

## **2.5 Extension Farmers' Education**

The crucial role of farmers' education in the social and economic development of the nation cannot be over-emphasized. Never before in Nigerian history has the necessity for educating and raising the productive capacity of our farmers been of such importance as it is today. Increased agricultural productivity depends primarily upon the acceptance of cultural and technological changes at the rural farm level.

Thus, for Nigerian agriculture to improve, our farmers have no alternative but to learn and adopt recommended scientific farming techniques in place of their traditional practices. Perhaps, the slow development of Nigerian agriculture can be attributed to the inability of the Nigerian farmers to respond positively to new ideas, they must be properly educated on how best to apply the new ideas or practices to their farming activities. This is because the new ideas are often complex, technical and can hardly be understood by most of our farmers. Nigeria cannot achieve increased agricultural productivity on rural farm level, except through the provision of basic agricultural education, particularly, the non-formal or extension type that will help move millions of the farmers from traditional to progressive farming, thereby improving the overall quality of rural life. It is not very easy to define agricultural extension in a short concise, phrase or statement. Any attempt to define it properly would involve lengthy explanation of several principles and philosophies. However, different authorities and experts have defined extension in different forms and ways, all ending on the improvement of the standard of living of the people. See page ...for various definitions of extension offered by experts.

## **2.6 Common Extension Education Services for Nigerian Farmers**

Extension services are the different programmes/projects/recommendations, which the extension service make available to their clientele through the use of extension education process. An agricultural extension service encompasses all aspects of agriculture. It includes the provision of timely information, the linking of farmers with sources of farming inputs and credit facilities and most importantly, the provision of education services to farmers.

The mistake people are making was that of limiting agricultural extension services to helping the farmers to procure their planting inputs and other inputs needed on their farms; but people through hard experiences have come to realize the fact that for any agricultural project or programme to succeed, agricultural extensionists must be fully involved, so as to participate in all its activities from planning to execution. Modern agricultural extension work in Nigeria today, covers a wide spectrum of services, which include; improvement in production, marketing, storage, processing, fish farming, agro-forestry, input supply and distribution, manpower development, home economics/women in agriculture, irrigation, land management, farm mechanization, erosion control, livestock management, human resources/development, administration/management, programme planning and evaluation, youth development programmes etc (Anaeto, 2003 cited in Agwu, 2004).

Have a look at common example of an extension service which is the adoption of improved cowpea production technologies among farmers. Cowpea is an annual grain legume indigenous to tropical Africa. It is the most commonly cultivated grain legume in Africa. In West Africa legumes especially cowpea, are of major importance in the livelihood of millions of relatively poor people and account for up to 80% of the total dietary protein intake for adults and are virtually the only source of protein for many children (Bello, 1976 cited in Agwu, 2004). In Nigeria, cowpea is the most important indigenous grain legume extensively grown in most areas

north of the confluence of the River Niger and Benue, though consumption is distributed all over the country (Singh et al, 1997 cited in Agwu, 2004).

However, low yields are a significant attribute of the country's cowpea production estimates (Mortimore et al, 1997). The major reasons for low productivity include heavy biotic pressures, particularly from insects and other pests which often affect the plant throughout its life cycle and the seeds in storage, sub-optimal planting dates, low plant population, poor weed control, mixed cropping and low soil fertility status.

The research efforts of the Institute for Agricultural Research (IAR), Zaria, Institute of Agricultural Research and Training (IAR&T), Ibadan, the International Institute of Tropical Agriculture (IITA) and other scientists in the country using the concept of the Nationally Coordinated Research Project (NCRP) have led to the development of improved cowpea production practices designed for a broad range of growing conditions (IITA, 1993; Olufajo, 1997 in Agwu, 2004). The Agricultural Extension Services of the Institute for Agricultural Research (IAR) and the States' Agricultural Development Programmes (ADPs) in-charge of disseminating agricultural information to farmers on a nation-wide basis, have since 1988 been disseminating research results on these innovations on these innovations to cowpea farmers (Fadiji, 1996 in Agwu 2004).

## **2.7 Empirical Studies in Extension Education Services delivery**

World wide the public sector plays a dominant role in the provision of agricultural extension services. According to a worldwide survey conducted by the FAO, about 81% of the extension work around the world is carried out through a ministry or department of agriculture. Globally, some 600,000 extension workers are engaged in the provision of agricultural information to farmers of which 95% is carried out by public extension. In Nigeria, agricultural extension

services are provided free by the government through the Ministry of Agriculture and Special Agricultural Development Schemes (SADS). The public extension system is now seen as outdated, top-down, paternalistic, inflexible, subject to bureaucratic inefficiencies and therefore unable to cope with dynamic demands of modern agriculture.

However, Nigeria probably has the most elaborate extension system in Sub-Saharan Africa, with a population of over 140 million and 71 million hectares of arable land. The agricultural research system comprises of 17 commodity-based research institutes and a special national extension institute over 45 faculties of agriculture in conventional federal, state, and private universities, three universities of agriculture, several colleges of agriculture/polytechnics. It also includes three international agricultural research centres viz: International Institute of Tropical Agriculture (IITA), a sub-station of International Crop Research Institute for Semi-Arid Tropics (ICRISAT), and a sub-station of International Livestock Research Institute (ILRI)(Okwu and Ejembi, 2001). All of these institutions collectively or individually serve as the fountain of agricultural innovations for both public and private agricultural extension service providers. In Nigeria agricultural extension services have been mainly public. Currently the major provider of public sector agricultural extension services is Agricultural Development Programme (ADP) in each of the 36 states of Nigeria.

The pre-ADP extension services were presumed to be ineffective and could only provide limited services to majority of farmers in the basic farming enterprises. This formed the basic fact underlying the removal of the extension service from the civil service system and the introduction of Agricultural Development Project (Ekpere, 1991 cited in Saliu & Age, 2009).

Enclaved Agricultural Development Projects were first established on trial basis with World Bank funding in Funtua, Gusau, Gombe, Anyigba, Lafia, Bida, Ilorin, Ekiti-Akoko, and Oyo-

North between 1974 and 1982. The outcome of trials was good as the ADP was adopted in all of the states of the federation, including Abuja. The World Bank-ADP approach has been used in Nigeria to re-organize the management of the agricultural extension system for effective performance. The main features are the training and visit extension system which the state ADPs use. The system includes a single line of command, a well defined geographical boundary of operation for each extension worker, a supervisor to supervise ratio of not more than 1:8. Other characteristics include a systematic program of short training courses, removal of all non-agricultural extension monitoring and provision of adequate transport facilities. These features ensure flexibility and prompt decision-making devoid of regular civil service bureaucracy.

The performance of the extension services since the inception of this professional system has been encouraging. Extension contacts with farmers have increased, several technologies have been disseminated and adopted by farmers (Oyebanji, 1994 in Saliu, 2009). Idachaba (2005) cited in Age (2009) also asserted that Anyigba ADP greatly transformed the lives of the Igala people through the revolution in extension services delivery. However, Mijindadi (1992) in Age (2009), observed that some prevailing problems existed and limited the effectiveness of the extension system. The problems include: insufficient funding at state level, inadequate availability of inputs, poor logistics support, and inadequate staffing.

## **2.8 Main Constraints Limiting Extension Services Delivery in Nigeria**

The role of agricultural extension involves dissemination of information, building capacity of farmers through the use of variety of communication methods and help farmers make informed decision Sinkaye (2005), equates help in extension to empowering all members of the farm households to ensure holistic development. The Nigerian extension service is bedevilled by several problems as identified by Agbamu (2005). These include inadequacy and instability of

funding, poor logistic support for field staff, use of poorly trained personnel at local level, ineffective agricultural research extension linkages, insufficient and inappropriate agricultural technologies for farmers, disproportionate extension agents: farm family ratio and lack of clientele participation in programme development. Others are poor input supply, irregular evaluation of extension programmes and policy, institutional and programme instabilities of national agricultural extension systems. However, these are opined by professionals as the major constraints to extension service delivery in Nigeria, they are as follows:

#### **i. Organization**

The organization of extension system should be well spelt out in the agricultural extension programme. This according to Contado (1997), affects the framework for the service, scope, magnitude and structure of the extension system, effectiveness and impact of the extension service. He identified centralized, decentralized, cooperative and pluralistic organization of extension with different degrees of involvement of national, state and local governments Nigerian extension is more or less the decentralized type but the federal coordinates, states carry out extension programmes, manage and control activities and resources. As observed by Contado (1997), the pluralistic type of extension organization is emerging in many countries, this is true for Nigeria. This has to be reflected in the Agricultural Extension Programme (AEP) because the need for extension is high. Public, private and non governmental organizations implement agricultural extension programmes e.g Oil companies such as Shell Petroleum Development Company (SPDC), in the Niger Delta Region, Universities, agro-business firms, religious and farmers' organizations e.g Farmers Development Union (FADU). As observed by Contado (1997), the geographical coverage, subject matter, clientele and standard of work of the organizations are not known, and their effort are not coordinated.

## **ii. Staffing problem**

Problem of insufficient extension staff both in quality and quantity has remain the major point of concern in agricultural extension service delivery. Considering the enormous functions and tasks of extension, technical competence and number of professional staff in the organization becomes crucial. The pre-service training must be adequately designed to cover the broad areas such as technical subject matter, communication and education, rural social systems and information about extension organization and operations. There should also be provision for staff development. This is particularly relevant because of shortage of extension staff vis-à-vis geographical coverage and farming population. The Extension Agent (AE): Farm Family (FF) ratio is very low with an average of 1 EA to 1,722 FF in 2003 (Agbamu 2005). Recent figures for some states South East and South West states is as high as -1:1,590-7,000, 1:1,275-5,600 compared to 1:1200, 1:800, 1:1000, 1:252, and 1:500 for Indonesia, Mexico, Tanzania, Japan and South Korea respectively.

Malone (1984), observed that staff training will help to maintain and upgrade competence of staff to perform tasks related to their jobs which aid the organization to reach its goals within its stated mission. Hence, the need for capacity building from time to time to solve basic production, management and marketing problems. The Agricultural Extension Programme should support training of staff to be confident in solving farmer's problems and supply of information needs of farmers. It should make provision for acquisition of skill by extension agent's facilitators to deal with particular clients, women, youths. Current issues such as sustainable agriculture and rural development, participatory approaches (participatory learning and action approaches), comparative extension, best practices, community driven development, advances technologies, problems diagnostic skills etc. Provision of funds, logistic support, motivation and training

(overseas and higher education) will be necessary. In the proposed policy, training agenda and needs of extension agents/facilitators should be dictated by the requirements of farmers.

### **iii. Extension Funding**

It was noted that there is insufficient fund to provide adequate coverage of States Agricultural Resources Development for all groups of farmers especially resource-poor subsistent ones, women and youth in developing countries. There is need for substancial public funding of agricultural extension because of the benefits accruable. The general impression is that extension is expensive and wasteful; the criticism of T&V but huge investment will be required to develop a country with over 70% involved in agriculture and who are rural based to attain broad based development. Contado (1997), suggests that ways to improve efficiency and reduce cost of public extension should be explored by stakeholders. This could be through encouraging group approach, but not neglecting individual contacts, use of mass media channel. Cost sharing by the 3 tiers of government, support from development partners, the private sector, NGOs and farmers organizations could be fixed as obtains in donor supported programmes. The Agricultural Development Fund should be effectively sourced and used as sustained fund as stated in Nigeria's Agricultural Policy.

### **iv. Ad-hoc Agricultural Extension Policies**

Frequent improvisation and ad-hocism is a major set back to agricultural extension in Nigeria. Development planners have indicted policy makers for their lack of sustainability, lack of continuity, lack of realism and consistency. Successive governments come up with agricultural policies and programmes which were different from their predecessors. Little attention has been given to policy instruments and variables such as development needs of the people, target

beneficiaries, budgetary constraints, potential funding sources, manpower availability and other socio-economic needs of the people.

**v. Lack of Grassroots Participation**

Most agricultural policy has been top-down. The implication is that planning and policy practices have negative impact on extension service delivery. Agricultural development policy often ignored the need for grassroots and people participation, such agricultural policies do not reflect the needs, aspirations and realities of the beneficiaries. This policy is based on lack of reliable data-based and lack of the mechanism for coordination, implementation, monitoring and evaluation.

**vi. Lack of Rural Infrastructure**

Lack of infrastructures such as roads, transportation and communication facilities as well as other social amenities have been the hallmark of rural communities whose remain the ultimate consumers of extension service. The aforementioned bottleneck largely limits the efficiency and effectiveness of extension service delivery nation wide.

**vii. Inappropriateness of Agricultural Technologies**

Technologies for agricultural production must be appropriate and respond to the ecological, financial, economic and cultural need of the society. Poor farmers participation in planning and development of new technologies seriously resulted to complete rejection of such technology for the simple reason that they are not compatible with their farming system and as well economically unaffordable.

**viii. Lack of Adequate Liaison between Extension & Research**

This problem resulted to irresponsiveness of research findings to the needs of the farmers. Many research recommendations are not economically viable and culturally comfort with farmers farming system and stage of development.

#### **ix. Long Decision Making & Communication Process**

Most of the approaches toward extension service delivery are top-down command which largely result in long bureaucratic procedure so that by the time information get to the farmers it is distorted and sometimes becomes of no effect.

#### **x. Weak Extension- Farmer input Linkages**

The Research-Extension-Farmer-Input-Linkage-System (REFILS) means to connect farmers with the research and extension systems, has had operational problems. These have included inadequate supplies of improved seedlings for distribution to farmers, shortage of well maintained vehicles for input distribution, and lack personnel for all different agricultural sector (FGN, 1997).

#### **xi. Lack of Accountability extension to Farmers**

The public sector led extension delivery system by the ADPs, because of their monopolistic tendencies and lack of competition, lacks accountability to farmers. Also agricultural extension in most parts of Nigeria has concentrated on the crop sub-sector with limited outreach to farmers, and need to be decentralized to the local levels.

Similarly, ZACAREP (2006), opined that the followings are the main constraints limiting effective extension service delivery among VEAs and farmers in the state;

1. Fear of job insecurity among extension staff
2. Lack of farmer' interest in extension programme
3. High risk and uncertainty in personnel

4. Insufficiently trained extension personnel
5. Reluctance on the part of farmers to pay for extension services
6. Administrative and bureaucratic bottlenecks in policy implementation
7. Farmer' poor economic background
8. Difficulty in attaching monetary value to extension services
9. High level of subsistence farming
10. Political instability
11. Unequal access to resources
12. Exploitation by extension service providers
13. Unfavourable government policies
14. Irresponsiveness of extension services to clients needs
15. Poor linkages between research and extension
16. Inadequate government guarantees, regulation and control over extension providers excesses and abuses
17. Tendency to focus more attention on large scale farmers thereby neglecting the small scale farmers
18. Corruption and nepotism among extension staff, and
19. Poor capacity building of extension staff

## **2.9 Summary of Literature Reviewed and Uniqueness of the Study**

Going by what have been explained by experts as reviewed in this chapter, extension education is an education and it is aimed at bringing a desirable change in the behaviour (knowledge, skills and attitudes) of rural people to improve their social, economic and psychological statuses. However, the utilization of extension education services by farmers is influenced by number of

factors among which are the characteristics of the individual farmers; characteristics of the technology adopted; socio cultural characteristics of farming population, and the speed with which farmers are made aware of the technology and its application to local production systems, using the various methods of extension services delivery, viz. individual contact, group contact and mass or community contact methods.

This study is unique in the sense that previously no research was said to be conducted in the area of the study, on the factors influencing the effectiveness of extension education services for farmers in Kaugama Local Government Area of Jigawa State. Also the researcher will highlights some of the silent issues that are said to be bedevilling the efficiency of extension service delivery, and as well offer some recommendations that would improved extension activities within the various farming communities that make up the entire LGA.

## **CHAPTER THREE**

### **METHODOLOGY**

This chapter is concerned with how the research was conducted, as methodology is a powerful weapon in the field aspect of research. It also shows the procedures that had been taken before a conclusion was reached.

#### **3.1 Research Design**

This research adopted the survey design. The Survey research design method is used when studying;

Phenomena that influence the interaction of people as they pursue their everyday lives. A Survey design could also be seen as one which involves the assessment of the public opinion, using questionnaire, interviews, and sampling method.

According to Osunbiyi (2005:56) a survey research design is used in studies such as:

- a) Audience reaction to a particular programme or medium.
- b) Opinions on certain policies or organizations and
- c) Numbers of certain policies or organizations and number of individuals or organization that have adopted a particular policy.

Another justification for choosing a survey design for this research is drawn from the work of Defleur and Dennis (1996), where it was noted that the 'survey as a research design is widely used in communication research and is a favourite of those who study the behaviour or characteristics of the audience or clients.

The study adopted the survey design for it is concerned with gatherings of people's perceptions. Leedy (1990) argues that where perceptions are sought, surveys are excellent vehicles for gathering data. As such, the survey design was chosen for this research because it involves the

use of questionnaire, interviews and the sampling method in order to obtain the people's perceptions or opinions as farmers i.e. a survey of the factors that influence the effectiveness of extension education services for farmers in Kaugama Local Government Area.

## **3.2 Population and Sample**

### **3.2.1 Population**

The population of the study comprised of all the 5,751 farmers that were registered for the phone alerted distribution of fertilizer in the four (4) district council areas of; Kaugama, Dakaiyawa, Yalo and Marke for the year 2014 rain season ( Fertilizer distribution Committee 2014).

### **3.2.2 Sample**

Out of the of 5,751 farmers registered in Kaugama LGA for the phone alerted fertilizer distribution, a total of 361 farmers formed the sample of this study in line with Krecei and Morgan (1970) sample size determination table, which indicated that 6,000 subject would require the selection of 361 since the population of this study is 5,751, therefore, is approximately rounded up to 6,000. Selected using purposive or judgemental sampling, i.e the researcher in trying to draw the sample of the study maintain proper consultations with extension unit in the local government department of agriculture, village heads and other relevant stakeholders to ascertain the status of each subjects as active practicing farmer in the areas for him/her to be included in the sample. And the selected sample was evenly drawn from the eight (8) farming communities.

## **3.3 Sampling Procedures**

A purposive or judgemental sampling was used in order to have a genuine representation of the population because of certain undue disposition observed where one claims to be a farmer in order to obtain fertilizer from government controlled price which he/she would later sold it at an

exorbitant price. As such each and every individual farmer included in the sample the researcher maintained proper consultations with all the relevant stakeholders to ascertain the status of each subject as an active practicing farmer in the area.

### **3.4 Data Collection Instrument**

The researcher developed a data collection instruments namely: Questionnaire and personal Interviews, the two instruments were proposed and used for data gathering.

#### **3.4.1 Questionnaire for farmers (QUEFOFAR)**

A questionnaire is an instrument used by researchers to measure key variables in a survey. It comprises series of questions that cover various segments relevance to the research problems. The questionnaire is in two parts, in part A personal details of the respondents were asked which includes; sex, age, marital status, educational qualification and experience in the farming activities. While part B comprised of series of questions that were based and focused on finding answers to the research questions of the study. Furthermore, the questionnaire will be translated to the indigenous language (Hausa) of the farmers to ensure that questions asked are fully understood by the respondents. The questionnaire contains twenty four (24) questions and in each question an options of; YES or NO was given for the respondents to choose.

#### **3.4.2 Interview Schedule for Extension Agents (ISFEAG)**

Also personal interview were employed in the sense that contact was made by the researcher with farmers and extension agents to acquire additional information and further clarifications relating to the study.

Ajala notes that;

*“This is a more reliable method of reaching sources of information. Through personal contacts, the practitioner can size up people’s opinion and attitudes”.* Ajala (2001).

The scheduled interview contains a series of questions which the researcher solicits to find answer that would help him have a clear picture on some issues that are very vital in the research. The questions were tailored in such way that will allow the extension agents to freely air their opinion related to their profession as field workers. The scheduled interview consist of two parts, part A requires extension agent personal data, while part B are the questions expected to be answered by the agents ( see appendix ii in page 58 ).

### **3.5 Validation of the data collection instruments**

#### **i. Validity**

The instruments covered all the variables contained in the research questions. The instruments were submitted to the research supervisor for necessary examination, observation and correction and the validity of the instruments were established before it was administered.

#### **ii. Reliability**

To ensure the reliability and consistency of the instruments, a test-retest method was employed. The instruments were administered twice to sample of 20 farmers and 3 extension agents (EA), who where in the study area but not parts of the main study. And the two tests were administered at different times maintaining a reasonable interval, the scores obtained from the two tests when correlated were highly stable.

### **3.6Administration of Data collection**

The primary source of data includes the use of questionnaire. It contains a series of questions; each of the questions is followed by some options out of which the respondents select where appropriate. Also the responses found from the questionnaire were collated and categorized with regards to the research question they answered and this served as data base of the research. The

personal interview employed also remain a valuable source of information of the research which contained a series of questions aimed at finding answers to the research questions, thereby reinforcing the questionnaire been administered.

The data was collected by the researcher with assistance of appropriately trained research assistants. A letter of introduction was received and presented to the Local Government Secretariat and the Extension Services Authorities so as to gain access to subjects. The village and other local/traditional leaders were also acquainted with the exercise. Both questionnaire application and interview session was aided by a research assistant, and data collection lasted for three (3) days.

### **3.6 Method of Data Analysis**

After data collection, data was analyzed to give some meaning, such that could be understood and interpreted properly. A descriptive statistics i.e. simple percentage and frequency count was used in the analysis of data in this research.

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND DISCUSSIONS

This chapter presents the findings from the data collected in the research. It also present analysis of the data and discussion of findings in the research, with a view to providing answers to the research questions.

#### 4.1 Demographic Characteristics of the Sample

The study consisted of three hundred and sixty one (361) respondents drawn from eight (8) farming communities, viz; Kaugama gari, Zaburan, Dakayyawa, Hadin, Marke, Garin Galadiman, Yalo and Chiromawa. The table 4.1 below shows the summary of the demographic characteristics of the sampled respondents:

Table 4.1 Demographic Characteristics of Sample

| S/No     | Characteristics                      | Frequency | Percentage % |
|----------|--------------------------------------|-----------|--------------|
| <b>1</b> | <b>Sex:</b>                          |           |              |
|          | Male                                 | 323       | 89.5%        |
|          | Female                               | 38        | 10.5%        |
|          | Total                                | 361       | 100%         |
| <b>2</b> | <b>Age:</b>                          |           |              |
|          | 40 years and above                   | 167       | 46.3%        |
|          | 29 years – 39 years                  | 129       | 35.7%        |
|          | 18 years – 28 years                  | 65        | 18%          |
|          | Total                                | 361       | 100%         |
| <b>3</b> | <b>Marital Status:</b>               |           |              |
|          | Married                              | 261       | 72.3%        |
|          | Single                               | 100       | 27.7%        |
|          | Total                                | 361       | 100%         |
| <b>4</b> | <b>Occupation:</b>                   |           |              |
|          | Civil Servants                       | 172       | 47.6%        |
|          | Self Employed                        | 189       | 52.4%        |
|          | Total                                | 361       | 100%         |
| <b>5</b> | <b>Formal Educational Attainment</b> |           |              |
|          | None                                 | 106       | 29.4%        |
|          | Primary Education                    | 41        | 11.4%        |
|          | Secondary Education                  | 62        | 17.2%        |
|          | Tertiary Education                   | 152       | 42%          |
|          | Total                                | 361       | 100%         |

From table 4.1 the male respondents constituted 89.5% (323) and 10.5% (38) were female. Therefore, it is understood that farming occupation in the area were dominated by males which was attributable to socio cultural factors in the area, since the people were predominantly Muslim by faith and women were supposed to play house wives and should remain indoors under 'puhdar' arrangements. Moreover, most farmers were forty years and above, while younger ones were fewer. In addition, more were married among the sample and who constituted 72.3% (261), while only 27.7% were single and this cannot be unconnected with fact that farming in the area is subsistence in nature mainly for feeding the household. In terms of employment, more constituting 52.4% (189) were self employed, while only 47.6% (172) were civil servants. The formal educational attainment of the respondents, as obtained in the data indicated that most respondents had tertiary education, and about three quarters of the sample were educated as shown on the table. However, close to one third of the sample had no formal education.

#### **4.2 Research question one (1)**

What are the characteristics of the extension education services that influence their usage by farmers?

To examine the responses as regard to research question one (1) the responses of the farmers sample were analysed, from the questionnaire applied to them, as a result of which Table 4.2 is provided as follows:

Table 4.2 Characteristics of the Extension Education Services that influence their usage by farmers in Kaugama Local Government Area.

| Characteristics   | Frequency | Percentage (%) |
|---|-----------|----------------|
| 1. The anticipated relative advantage of the extension services.                            | 303       | 84%            |
| 2. The easy nature of extension education in term of its application.                       | 309       | 85.5%          |
| 3. The affordable cost of purchase/payment of the extension services.                       | 291       | 80.6%          |
| 4. The compatible nature of the extension services with farmers existing farming practices. | 309       | 85.5%          |
| 5. Suitability of extension services to the agro-ecological circumstances of the farmers.   | 289       | 80%            |
| 6. Affordable cost of maintenance required of the extension services.                       | 307       | 85%            |
| 7. Level of uncertainty related to extension services.                                      | 287       | 79.5%          |

**Results:** The table above indicates seven (7) characteristics identified with the extension education services which influence their use by farmers in the area. As such each of the identified characteristics attract response from the sample population indicating yes option by summing up

their frequency and percentage, as follows; the anticipated relative advantage in the use of the introduced extension services attract a frequency of 303 (84%), naturally it has been established from our findings that farmers will adopt new technologies if they expected that it is more beneficial than what they already had. The easy nature of the extension services in terms of its application as a factor that influence the decision of farmers toward adoption of extension services attract frequency of 309 (85.5%) from the sample population. The finding show that majority of the farmers prefer such extension services that can easily be understood and manipulated within the shortest possible time, and EES that are complex in nature are usually avoided by them. Also affordable cost of purchase/payment of an extension service is considered one of the characteristics of EES that influenced its use by farmers in the area with frequency of 291 (80.6%) of the respondents believe that majority of the farmers are subsistence in nature, their poor economic base made them to always go for extension services that are of lower cost. Also compatible nature of the extension service with farmers existing farming practices as considered a characteristics of EES was the opinion of 309(85.5%) of the respondents, who according to them any extension that is not compatible with their existing farming system is avoided. Suitability of extension service to the agro-ecological circumstances of the farmers is another factor, and the respondents are of the opinion that acceptance of any extension services brought to the farmers was largely dependant upon this factor and 289(80%) of the respondents concurred. Also affordable cost of maintenance required of ES is a characteristic identified to influence farmers decision in the use of EES, a frequency of 307 (85%) of the respondent agreed that because of the subsistence nature of their farming which symbolises poor economic status of the farmers, they always went for ES with affordable cost of maintenance. Lastly, among the identified characteristics of extension services that influence its adoption is the level of

uncertainty related to it. Many farmers opined that the less uncertainty the higher patronage and the higher the uncertainty the lesser the level of patronage and this position is attributed to the fear of the likely outcome, if such an extension services is adopted. And 287 (79.5%) of the respondents aligned with the said position. Therefore, is pertinent to note that all the seven characteristics of the extension services identified to have influenced their usage by farmers, there was an observed level of consistency in the responses as more respondents go for yes option.

### 4.3 Research question two (2)

What are the farmers' characteristics that influence their decision to use an extension education service in the area? From the analysis of the questionnaire the information gathered were revealed in table 4.3:

Table 4.3: Farmers' characteristics that influence their decision to use EES in the area

| <b>Farmer's characteristics</b>                                    | <b>Frequency</b> | <b>Percentage (%)</b> |
|--|------------------|-----------------------|
| 1. level of education  | 291              | 80.6%                 |
| 2. economic strength of individual farmer                          | 308              | 85%                   |
| 3. prevailing social circumstances                                 | 301              | 83%                   |
| 4. previous exposures to extension education services              | 300              | 83%                   |
| 5. cultural characteristics/affiliation                            | 276              | 76.5%                 |
| 6. availability of information on the extension education services | 302              | 83.6%                 |
| 7. indifference and apathy on the part of individual farmer        | 271              | 75%                   |

Result: The table 4.3 indicates seven (7) individual farmers personal attributes or characteristics that influenced their decision to use extension education services in the area.

According to the table 4.3, the identified farmers personal characteristics were; farmers' level of education which attracted 291(80.6%) among the respondents, to concur. Who were of the opinion that education enables the individual farmers to know how to seek for and apply information on improved farm practices. Also the economic strength of the farmers influence their decision to adopt certain extension services, which 308 (85%) of the respondents admit that most of the farmers in the area are small scale which implies they are poor and in most cases could not afford some ES, as such have little or no access to credit facilities. Another factor is the farmers prevailing social circumstances at the time when extension services were introduced to them, who believed that the situation they found themselves dictate how they behave toward certain extension services. And this attracted a frequency of 301 (83%) among the respondents. Also farmers previous exposure to extension education services is viewed as farmers attribute, which the finding indicates 300 (83%) of the sample population agreed to be a factor that influence their decision to utilize an extension services. Cultural characteristics of the farmers is also among the factors that influence adoption of extension services by farmers in the area. The farmers argued that adoption of any technologies is dependant upon the degree of how congruence it is with the farmers cultural practices relating to their farming system and attracted a frequency of 276 (76.5%). Availability of information on the extension services also influence its adoption. The speed of the flow of information about an EES determine the rate of its adoption. Because the level of awareness among the farmers influence its adoption, in the sense that the more farmers became informed the more the adoption. And the result obtained shows 302 (83.6%) of the respondent accepted. Lastly, indifference and apathy on the part of the farmers is observed to be a factor that led to low adoption of technologies among farmers in the area and 271 ( 75% ) of the sample population concurred to this fact. And the indifference and apathy

disposition of the farmers is largely connected to the high level of ignorance/illiteracy among the rural population in the area.

#### 4.5 Research question three (3)

What are the challenges faced in the utilization of Extension Education Services by farmers in Kaugama LGA? Table 4.5 revealed the various challenges faced by farmers in the utilization of EES in the area:

Table 4.4: Challenges faced in the utilization of EES by farmers in Kaugama LGA.

| Challenges  | Frequency | Percentage (%) |
|---|-----------|----------------|
| 1. Corruption among extension agents  | 251       | 69.5%          |
| 2. Lack of infrastructures like communication and internet facilities                             | 233       | 64.5%          |
| 3. Inappropriateness of agricultural technologies introduced to farmers                           | 273       | 76%            |
| 4. Lack of access to credit facilities  | 287       | 79.5%          |
| 5. Poor funding on government part and exploitation on the part of extension services providers   | 285       | 79%            |
| 6. Inadequate extension agents to handle farmers problems   | 301       | 83%            |
| 7. Lack of government collaboration with farmers associations toward improving extension services | 289       | 80%            |
| 8. Lack of government subsidy on new technologies   | 261       | 72%            |

**Results:** The table presents the various challenges experienced by the farmers in the utilization of extension education services in the area. Based on the farmers perception and the felt gravity of each problems presented, the result obtained is as follows;corruption among extension agents is one of the challenges faced by farmers in the area. About 251(69.5%) of the farmers opined that corruption among extension workers contributed in crippling extension activities in the areas. Lack of infrastructures such as communication and internet facilities in the area, due to

poor internet coverage and poor radio signals make communication of extension education programmes difficult and sometimes impossible. And 233 (76%) concurred. Inappropriateness of the agricultural technologies introduced to farmers through the extension process 273(76%) of the respondents linked rejection of some extension services in the area to this problem. Lack of access to credit facilities, which about 287 (79.5%) of the respondents attributed it to their poor economic status, and access to such credit facilities require collateral which virtually most of the farmers could not afford. Poor funding by government and exploitation on the part of extension services providers was yet another challenges which 285 (79%) of the respondents agreed to have weaken extension service delivery. Consequently, private organisations that came in to provide extension services sometimes subject farmers to unnecessary exploitation. Also, inadequate Extension Agent (EA) to handle the farmers' problems is a serious challenge toward effective extension service delivery in the area which 301 (83%) of the respondents considered it a foremost among the challenges. As this finding revealed that there is presently only five (5) field extension agents available. Another challenge presented is the lack of governmental collaboration with farmers' associations and clubs, this finding has discovered a level of trust prevailing between the farmers and their leaders, and recommended extension services to farmers can easily diffused through their leadership. And 289 (80%) of the respondents disclosed that due to lack collaboration between government and the various farmers organisations/clubs extension services suffers a neglect which could have been avoided. Lastly, lack of government's subsidy on new technologies is another challenge which 261(72%) of the respondents attributed it to their weak economic strength, farmers who could not afford some recommended extension services. Consequently demand some form of subsidy from government to enable them acquire these services.

## **4.6 Summary of Findings**

On the basis of the findings of the study the following were observed:

1. The major characteristics of Extension Education Services that influenced their usage by farmers in the area included; the easy nature of Extension Education in term of its application; the anticipated relative advantage of the Extension Services; the compatible nature of an Extension Services with farmers existing farming system; the affordable cost of an Extension Services, and the affordable cost of maintenance required of an Extension Services.
2. The individual farmers' personal attributes that influenced their decision in the use of extension education services in the area included: Farmers prevailing social circumstances, Farmers' level of education, Farmers previous exposures to Extension Education Service, Economic strength of individual farmer, Availability of information on a given Extension Service, suitability of Extension Service to agro-ecological circumstances of the farmers, Level of uncertainty related to the extension service, and Indifference and apathy on the part of farmers
3. The major challenges experienced by farmers in an attempt to utilize Extension Education Services in the Area included: Inadequate Extension Agents to handle farmers problems; Lack of access to credits facilities; Lack of government collaboration with farmers associations toward improving Extension services; Lack of government subsidy on new technologies; Poor funding on government part and exploitation on the part of Extension Services providers; Lack of infrastructures like communication and internet facilities; Inappropriateness of agricultural technologies introduced to farmers, and Corruption among Extension Agents.

## **4.7 Discussion of the Findings**

The first objective for this study is to identify characteristics of extension education services that influence their use by farmers in the area. They included the anticipated relative advantage in the

use of the introduced extension services, naturally it has been established from our findings that farmers will adopt new technologies if they expect it is more beneficial than what they used to had, and 84% of the respondents concur to that. And this has become consistent with previous findings earlier reviewed. According to Anderson (1997) who stated that farmers would adopt new technologies and modify their resource use when they believe that the proposed change is relevant to their circumstances and can help them achieve their objectives. Also most of the extension agents interviewed disclosed that their clients are more inclined to adopt extension services, if they found out that it is going to be beneficial to them. The easy nature of the extension services in terms of its application as a factor that influence the decision of farmers toward adoption of extension services. This finding shows majority of the farmers prefer such extension services that can easily be understood and manipulated within the shortest possible time, and such extension services that are complex in nature are usually avoided by them. And the result obtained shows that 85.5% of the respondents concurred, and this has become consistent with some literatures reviewed. According to Rogers (1971) observed that agricultural innovations vary in their inherent characteristics, which to a large extent influence the decision of the farmers to participate. As a result, the farmer is more inclined to accept, and participate in a recommended practice, if the practice is profitable and simple to use. And from the demographic data of the sample population of this research indicated that 29.4% of the sample had no formal education, while 11.4% had primary education only, this implies there is low level of education among the farmers, as such the extension agents affirmed that the acceptance of any extension services is determine by its easy nature to be applied at the level of their understanding. Also affordable cost of purchase/payment of an extension service is another characteristics that influenced its use by farmers in the area, because of the fact that majority of

the farmers are subsistence in nature, their poor economic base made them to always go for extension services that are of lower cost. And 80.6% of the respondents agreed to this factor , and from the interview conducted the extension agents confirmed this position. Also, the compatible nature of the extension service with farmers existing farming practices was the opinion of 85.5% of the respondents, who according to them any extension that is compatible with their existing farming system is easily diffused and assimilated within the farming communities. And this has been confirmed by Rogers (1971) who observed that agricultural innovation vary considerably in their inherent characteristics, which to large extent influence their decision of the farmers to participate. As a result, the farmer is more inclined to accept, and participate in a recommended practice, if the practice is compatible with farmers existing farming system. And it was gathered that for any extension services to be widely accepted it most suit the existing farming system. Also suitability of extension service to the agro-ecological circumstances of the farmers is another factor which acceptance of any extension services brought to the farmers was largely dependant upon this factor and 80% of the respondents concurred, and it has become consistent with Gershon (2002) who reported that effective extension involves adequate and timely access by farmers to relevant advice. However, while access to appropriate information is necessary to improve agricultural productivity, it is insufficient. In general, farmers will adopt a particular technology if it suits their socio economic and agro-ecological circumstances. And from the interview with extension agents stated that the successful adoption of any extension services is dependant on its suitability with the agro-ecological circumstances of the farmers, and stressed that this factor is even a prerequisite before an extension services is to be considered by the farmers. Another characteristic of EES that influence it usage is the affordable cost of maintenance of those technologies, the farmers are of

the opinion that because of their poor economic strength they consider cost of maintenance and if it is affordable they go for it, and from the responses shows that 85% of the respondents agreed with this factor. The extension agents in the area when interviewed disclosed that because of the subsistence nature of the farming activities in the area affordable cost of maintenance of an ES influence its utilization, as a result were affordable cost of maintenance is higher the farmers would certainly avoid it. Lastly, among the identified characteristics of extension services that influence its adoption is the level of uncertainty related to it. Many farmers opined that the less uncertainty the higher patronage and the higher the uncertainty the lesser the level of patronage and this position is attributed to the fear of the likely outcome, if such an extension services is adopted. And 79.5% of the respondents aligned with the said position. And it has been corroborated by Singh and Emechebe (1998) who had posited that the rate of adoption of new technology is subject to its profitability and the degree of risk and uncertainty associated with it, the capital requirement, agricultural policies as well as the socio-economic characteristics of the farmers. Also according to one of the extension agents interviewed revealed that farmers in the area are always sceptical to innovations because of the likely consequences, and further stated that in most times were level of uncertainty connected with a particular ES is high they have to pilot test such ES in order to convince their clients to patronize it. Therefore, is pertinent to note that all the seven characteristics of the extension services identified to have influenced their usage by farmers, there was an observed level of consistency in responses as more respondents concur to the yes option then otherwise.

The second objective for this study is to determine farmers' personal characteristics that influenced their decision to use extension education services in the area. As indicated in table 4.3, they includes; farmers' level of education was one of the farmers personal attributes that

influence their decision to use an extension services in the area, which attracted 80.6% among the respondents to concurred. For the fact that education enables the individual farmers to know how to seek for and apply information on improved farm practices. This is because as the individual gained the ability to read, he is able to extend the scope of his experience through the print media Ozowa (1995) opined that lack of awareness among traditional farmers in Nigeria can be attributed to high level of illiteracy, which in turn contributes to the low level of adoption of agricultural production technology. Also according to one of the extension agents interviewed disclosed that some of the farmers who can read and write easily adopt some extension services on their own by comprehending the content of application manuals that usually accompanied some technologies brought to them through extension process with little assistance from the EA. Also the economic strength of the farmers influence their decision to adopt certain extension services, most of the farmers in the area are small scale which implies they are poor and have little or no access to credit facilities. On this factor some literatures reviewed have indicated a correlation between income and agricultural information use. Such as Osuji (1983) and Atala (1984) that income is crucial in agricultural information use because the higher the income of the farmer, the more likely he would seek and obtain information for use. With improved income, the farmer will be better disposed to spend more on recommended farm practices that would further increase his farm earnings. Furthermore, the ES in the area revealed that they discovered that the wealth of individual farmers influence their adoption because access to more resources increase farmers risk bearing ability, as such can easily pay the cost of ES they so desired. Another factor is the farmers prevailing social circumstances at the time when extension services were introduced to them attracted 83% of the respondents who believed that the situation they found themselves at times dictate how they behave toward certain extension services. And this

has become consistent with position of Anderson (1997) that farmers would adopt new technologies and modify their resources use when they believe that the proposed change is relevant to their circumstances and can help them achieve their objective. The few EA that are working in the area of this research affirmed that prevailing social circumstances play a significant role in the adoption of ES by farmers in the area. For example, in the past years especially when shortage of rainfall was anticipated farmers themselves always strive to acquire improved seedlings that could be planted and harvested within shortest period of time. Another farmers personal attributes is the previous exposure to extension education services which the finding indicates 83% of the sample population believed is one of the factors that influence their decision to utilize an extension services. They revealed that some of them that had utilized extension services and noticed increased production, subsequently they adopt future extension services introduced to them. While those that had a bitter experience with previous extension services usually develop negative attitude toward future extension services. Although the EA stated that older farmers have more experience in crop production, and more exposed to the potentials in modern technology than the younger ones. Also cultural characteristics of the farmers are also among the factors that influence adoption of extension services by farmers in the area. The farmers argued that adoption of any technologies is dependant upon the degree of how congruence with the farmers cultural practices relating to their farming system. And this position has been corroborated by previous reports by Purcell (1997), who stated that the rate of adoption of a technology by farming population would depend on the characteristics of individual's production circumstances, characteristics of the technology itself, socio cultural characteristics of individual farmers and the speed with which the population is made aware of the technology and its application to local production systems. And the EA disclosed that some of the farming

communities due to their cultural beliefs have made them refused to apply fertilizer on their farms instead they goes for local manure, in spite of concerted efforts of the EA to convince them to use fertilizer, and this is not unconnected with their cultural beliefs. Availability of information on the extension services also influences its adoption. The rate of speed at which farmers became aware of extension services also determines the rate of its adoption. And this has become consistent with position of Purcell (1997), that the rate of adoption of technology by farmers depends on the speed with which the population is made aware of the technology. And is established by the EA in the area specifically mentioned areas around Girbobo were left behind about the knowledge of certain ES in the area that have been enjoyed by farmers in the other side of the Local Government Area for the fact that radio signals were so poor in the area mentioned. Lastly, indifference and apathy on the part of the farmers is observed to be a factor that led to low adoption of technologies among farmers in the area and 75% of the sample population concurred to this fact. And the indifference and apathy disposition of the farmers is largely connected to the high level of ignorance/illiteracy among the rural population in the area. This is consistent with findings of Mohammed (1977) that education enables the individual farmers to know how to seek for and apply information on improved farm practices. This is because as the individual gained the ability to read, he is able to extend the scope of his experience through the print media. An illiterate farmer is generally apathetic and lack choice. And some of the EA attributed it to lack of education couple with living in remotely and isolated homesteads/villages were interactions for exchange of ideas with other villages is sometime very difficult.

The third objective of this study is to examine the challenges experienced by the farmers in the utilization of extension education services in the area. As indicated in table 4.4, they include; Corruption among extension agents is one of the challenges faced by farmers in the area. About

69.5% of the farmers opined that corruption among extension workers contributed in crippling extension activities in the areas. And issue of corruption is seen as one of the factors militating against effective extension service delivery in the country. Another challenge is lack of infrastructures such as communication and internet facilities in the area, due to poor internet coverage and poor radio signals make communication of extension education programmes difficult and sometimes impossible. As such this problem has limits the efficiency and effectiveness of extension services delivery in the area. Inappropriateness of the agricultural technologies introduced to farmers through the extension process 76% of the respondents attributed rejection of some extension services in the area to this problem. And, described some innovations as not compatible and economically unaffordable. Lack of access to credit facilities is a challenge toward the utilization of extension in the area. About 79.5% of the respondent connect this problem to their poor economic status, and access to such credit facilities require collateral which virtually most of the farmers could not afford. Poor funding by government and exploitation on the part of extension services providers was yet another challenge which 79% of the respondents agreed to have weakened extension service delivery. Consequently, private organisations that came in to provide extension services sometimes subject farmers to unnecessary exploitation. Also, inadequate Extension Agent (EA) to handle the farmers' problems is a serious challenge toward effective extension service delivery in the area. This finding shows there is presently only five (5) field extension agents in the area expected to cover the entire local government area which is quite impossible. And training and retraining of the agents was said to be given less priority by the extension managers. Another challenge presented is the lack of governmental collaboration with farmers' associations and clubs, this finding has discovered a level of trust prevailing between the farmers and their leaders, and recommended

extension services to farmers can easily diffused through their leadership. But due to lack collaboration between government and the various farmers organisations/clubs extension services suffers a neglect which could have been avoided. This stand has been corroborated by Ajayi (2010), who stated that rural farmers organisations give them a collective voice and help them to harness their resources together in order to raise their economic statuses. Lastly, lack of government's subsidy on new technologies is another challenge which 72% of the respondents attributed it to weak economic strength of the farmers who could not afford some recommended extension services. Consequently demand some form of subsidy from government to enable them acquire these services.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This chapter provides the summary of the study, conclusion based on the findings of the study and recommendations for further improvement of Extension education services delivery in the area of the study.

#### **5.1 Summary**

The study made a survey of the factors that influence the effectiveness of Extension education services for farmers in Kaugama Local Government Area of Jigawa State. The study started by providing a background of the study that prompted it, a statement of the study problem, objectives of the research or study, the research questions which the study intend to find answers to, operational definitions of terms, a brief on the area of the study (Kaugasma LGA); scope and delimitations of the study and of course, the significance of the research.

Also, a review of related literatures was conducted which covered; the theoretical framework, which related to the factors that influenced decision of farmers to use an Extension Service, methods of Extension education services delivery, the concept of Extension Education as offered by different scholars in the field, Extension Farmers' Education, empirical studies in Nigerian Extension Education Services delivery, constraints limiting Extension Education Services delivery in Nigeria and a summary of the literatures reviewed and the uniqueness of the study was also presented.

The study employed the survey design because of its appropriateness to the research problem, for the fact that the research involved the study of the opinion, perception and characteristics of the farmers. A sample of three hundred and sixty one(361) respondents was used in accordance with Kreice & Morgan table of sample distribution, and data was collected through the use of

questionnaire for the farmers and an interview schedule for the few Extension Agents. The instruments were found valid and reliable after they had been field-tested. The data was collected by administering the questionnaire to the respondents with the help of research assistants. Also, the data collected was categorized, with regards to the research questions posed to serve as data-base for the research. Having the data base of the research at hand, the work was analyzed to give some meaning that would enable it to be understood and interpreted properly. Descriptive statistics, viz simple percentages and frequency counts were used for explanations.

## **5.2 Conclusion**

The study surveyed the various factors that influenced the effectiveness of Extension education services in Kaugama LGA and some of these factors were related to the nature of the Extension Services introduced to the farmers while others were related to the individual farmer's personal attributes. Ultimately, it was expected that to achieve a successful delivery and effective utilization of extension services in the area, consideration must be given to these factors that would encourage effective Extension Education Services delivery to the farmers which is aimed at improving the life of the rural farmers through increase productivity.

## **5.3 Recommendations of the Study**

Based on the findings of the study, the following recommendations are made for improving agriculture through effective extension services delivery in the area;

1. There is need for government at the local level to resuscitate extension activities through recruitment of extension workers that would cater for the extension needs of the rural farming communities with proper arrangement for their training and retraining which will make them fully prepared for the challenges ahead. And this calls for intervention of the State government

through serious collaboration between the extension unit of the State Ministry of Agriculture and Local Government Department of Agriculture for boosting extension activities at the grass root.

2. Also there is need for adequate funding of extension activities at all level of governments. This would pave ways for a sound and well structured extension activities that would be broaden in content and scope which would be responsive to the numerous demands of the clients (farmers).

While, extension agents should exercise a proactive and participatory role and serve as knowledge and information brokers.

5. Farmers in the area should be encouraged to form clubs/ associations, through which they could easily access government facilities and which is ordinarily difficult for the single individual farmer to obtain. Similarly, through these associations and clubs, the farmers can easily make their extension needs known to the appropriate authority for solution.

#### **5.4 Suggestions for further study**

This study was a survey of the factors that influenced the effectiveness of Extension education services for farmers in Kaugama Local Government Area. It is on the basis of this study that the following have been suggested for further study :

- An evaluation of the roles of extension agents towards improving productive capacities of the farmers in the area.
- Impact assessment of some adopted Extension education services introduced to farmers in the area.
- An assessment of the appropriate extension services approaches suitable for farmers in the area.

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## Appendix I

### Sample Questionnaire for farmers

I am a student of M.Ed (Extension Education) in the Department of Adult Education and Community Services, Bayero University; Kano conducting a research entitled A survey of the factors influencing the effectiveness of extension education services for farmers in Kaugama local government area of Jigawa State. Below are questions drawn to find out relevant facts on the research topic. Please, you are requested to respond to the questions provided and you are being assured that your response will be treated in the strictest confidence and used only for academic purpose. Respondent is expected to tick the appropriate answer of his/her choice.

#### **PART A**

##### PERSONAL DATA

1. Sex: (a) Male [  ] (b) Female [  ]
2. Age: (a) 18-28yrs [  ] (b) 29-39yrs [  ] (c) 40yrs & above [  ]
5. Marital status: (a) Married [  ] (b) Single [  ] (c) Any other [  ] (please specify)-----  
-----
6. Employment: (a) Civil servant [  ] (b) Trader [  ] (c) Any other [  ] (please specify)---  
-----
7. Formal Educational attainment: (a) None [  ]  
(b) Primary education [  ]  
(c) Secondary education [  ]  
(d) Tertiary education [  ]  
(e) Any other [  ] (please specify)-----

#### **PART B**

1. Is the anticipated relative advantage of a given extension service attract farmers to adopt it?  
A) Yes  
B) No
2. Is the simple nature in term of application motivate farmers adopt technology through extension service?  
A) Yes  
B) No
3. Is the cost of an extension services is one of the aspect considered by farmers before they adopt it?  
A) Yes  
B) No

4. Is the compatible nature of a given extension services with the farmers' existing farming system make it acceptable to the farmers?  
A) Yes  
B) No
5. Is the cost of maintaining a given extension services influence its usage by farmers?  
A) Yes  
B) No
6. Is the economic strength of the farmer is a factor that influence his/her decision to use an extension services?  
A) Yes  
B) No
7. Is the socio cultural aspect of the farmers are among factors that determine their decision to use an extension services?  
A) Yes  
B) No
8. Does the availability of information on a given extension education services influence its adoption by farmers?  
A) Yes  
B) No
9. Does the suitability of a given technology with the agro-ecological circumstances of the farmers ensure its adoption?  
A) Yes  
B) No
10. Is the level of uncertainty related to a particular extension services influence its adoption by farmers?  
A) Yes  
B) No
11. Are the farmers level of education served as determinant factor in their adoption of a given extension services?  
A) Yes  
B) No
12. Does farmers prevailing social circumstances has effect in the adoption of a given extension services?  
A) Yes  
B) No
13. Is the previous exposure of some farmers to extension education services influenced their decision to adopt new ones?  
A) Yes  
B) No
14. Does the farmers' cultural characteristics plays a vital role in their decision to use extension education services?  
A) Yes  
B) No
15. Do you see indifference and apathy on the part of the farmers as a reason not to utilize extension services brought to them?  
A) Yes

B) No

16. Is corruption among extension agents seen as a problem faced by farmers in the area?

A) Yes

B) No

17. Is lack of infrastructures like communication and internet facilities as part of the factor limiting extension education services in the area?

A) Yes

B) No

18. Also is inappropriateness of agricultural technologies in the extension process is another problem that make farmers not to adopt extension services?

A) Yes

B) No

19. Is lack of access to credit facilities by farmers render them not to utilize some extension services?

A) Yes

B) No

20. Do you see poor funding on the part of government and exploitation on the part of extension service providers as challenges facing extension services in the area?

A) Yes

B) No

21. Is inadequate extension agents to cater for the farmers need as part of the challenges in the area?

A) Yes

B) No

22. Is lack of government collaboration with farmers' associations/clubs constitute a challenge toward improving extension services in the area?

A) Yes

B) No

23. Do you agree that lack of government subsidy on new technology constitute problem to its adoption by farmers?

A) Yes

B) No

**THANK YOU**

## Appendix II

### Sample Interview Questions for Extension Agents

I am a students of M.Ed (Extension Education) conducting a research entitled A survey of the factors influencing the effectiveness of extension education services for farmers in Kaugama local government area of Jigawa State. Below are the questions expecting you to respond in order to help the researcher have relevant information about the area of your profession. Part A of this interview requires your personal data while Part B is the questions you need to answer.

#### PART A

##### PERSONAL DATA

1. Marrital Status \_\_\_\_\_
2. Sex \_\_\_\_\_
3. Age \_\_\_\_\_
4. Educational qualification \_\_\_\_\_
5. Number of years in service \_\_\_\_\_

#### PART B

- 1 How often are exposed to training in Extension Education?
- 2 What are those characteristics associated with Extension Education Services that influence their use by farmers in the area?
- 3 What are the factors that influence the use of Extension Education Services by farmers in the Area?
- 4 What are those characteristics you observed in your clients that influence there decision to use Extension Education Services?

- 5 What are the challenges you experienced in trying to deliver Extension Education Services to your clients in the Area?
- 6 How can you describe funding of Extension activities by government in the Area?
- 7 What is your opinion in term of extension staff strength at the local government level?
- 8 What method of contact between agents and farmers in the areas you consider appropriate and why?
- 9 What are your recommendations to government and other relevant stakeholders for the advancement of agricultural extension in order to boost productivity in the area ?
- 10 How can you describe your relationship with your clients and what might have been the reason for that?

**THANK YOU**

### Appendix III

#### TABLE FOR DETERMINING RANDOM SAMPLE SIZE FROM A GIVEN POPULATION

(Confidence level 95%; Margin of error + or - 5%)

(N = Population, S = Sample)

| N   | S   | N     | S          | N          | S          |
|-----|-----|-------|------------|------------|------------|
| 10  | 10  | 220   | 140        | 1,200      | 291        |
| 15  | 14  | 230   | 144        | 1,300      | 297        |
| 20  | 19  | 240   | 148        | 1,400      | 302        |
| 25  | 24  | 250   | 152        | 1,500      | 308        |
| 30  | 28  | 260   | 155        | 1,600      | 310        |
| 35  | 32  | 270   | 159        | 1,700      | 313        |
| 40  | 36  | 280   | 162        | 1,800      | 317        |
| 45  | 40  | 290   | 165        | 1,900      | 320        |
| 50  | 44  | 300   | 169        | 2,000      | 322        |
| 55  | 48  | 320   | 175        | 2,200      | 327        |
| 60  | 52  | 340   | 181        | 2,400      | 331        |
| 65  | 56  | 360   | 186        | 2,600      | 335        |
| 70  | 59  | 380   | 191        | 2,800      | 338        |
| 75  | 63  | 400   | 196        | 3,000      | 341        |
| 80  | 66  | 420   | 201        | 3,500      | 346        |
| 85  | 70  | 440   | 205        | 4,000      | 351        |
| 90  | 73  | 460   | 210        | 4,500      | 354        |
| 95  | 76  | 480   | 214        | 5,000      | 357        |
| 100 | 80  | 500   | 217        | 6,000      | 361        |
| 110 | 86  | 550   | 226        | 7,000      | 364        |
| 120 | 92  | 600   | 234        | 8,000      | 367        |
| 130 | 97  | 650   | 242        | 9,000      | 368        |
| 140 | 103 | 700   | 248        | 10,000     | 370        |
| 150 | 108 | 750   | 254        | 15,000     | 375        |
| 160 | 113 | 800   | 260        | 20,000     | 377        |
| 170 | 118 | 850   | 265        | 30,000     | 379        |
| 180 | 123 | 900   | 269        | 40,000     | 380        |
| 190 | 127 | 950   | 274        | 50,000     | 381        |
| 200 | 132 | 1,000 | 278        | 75,000     | 382        |
| 210 | 136 | 1,100 | 285        | 100,000    | <b>384</b> |
|     |     |       | 1,000,000  | <b>384</b> |            |
|     |     |       | 10,000,000 | <b>384</b> |            |

**Source:** Kreicie, R. V. & Morgan, D. W. (2006) "Determining Sample for Research Activities" *Educational and Psychological Measurement*, obtained from <http://www.fns.usda.gov> accessed on 13 / 8 / 2013