UTILIZATION OF *"NOMA TUSHEN ARZIKI"* PRTVC RADIO PROGRAMME AMONG FARMERS IN BARKIN LADI

BY

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BEING A DESSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE DEGREE IN MASS COMMUNICATION

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DECLARATION

I hereby declare that the work in this thesis title **'Utilization of *Noma Tushen Arziki* PRTVC Radio Programme among farmers in Barkin Ladi'** was performed by me in the department of mass communication, Ahmadu Bello University, Zaria. Under the supervision of Dr. Yakubu Ozohu-Suleiman and Dr. Eze Cosmos.

The information derived from the literature has been duly acknowledged in the text and a list of references provided. No part of this work has been presented for another degree or diploma at any institution.

_____ _____

Dangabar Felicia Ezekiel Date

CERTIFICATION

This thesis entitled **"Utilization of *Noma Tushen Arziki* PRTVC Radio Programme among farmers in Barkin Ladi"** by Dangabar Felicia Ezekiel meets the regulations governing the award of degree of Masters of Science (M.sc) in Mass Communication of the Ahmadu Bello University Zaria-Nigeria and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This thesis is dedicated to Almighty God for giving me the courage to conduct this research work. It is also dedicated to my late cousin Molluma Yakubu Mela may her soul rest in perfect peace.

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LIST OF ACRONYMS/ABBREVIATIONS

ADP	-	African Development Project
ADPs	-	Accelerated Development Area Projects
FAO	-	Food and Agricultural Organization
FGN	-	Federal Government of Nigeria
FVR	-	Farmer Voice Radio
ICT	-	Information and Communication Technology
ICT4D	-	Information and Communication for Development
IRM	-	Imazapyr-Resistance Maize
JKUAT	-	Jomo Kenyatta University of Agriculture and Technology
KBC	-	Kenya Broadcasting Corporation
LGA	-	Local Government Area
NAEP	-	National Extension Policy
NAERLS	-	National Agricultural Extension and Research Liaison Services
NGOs	-	Non-Governmental Organisations
NFDP-I	-	National Fadama Development Project-I
NARES	-	Nigerian Agricultural Research and Extension System
NPC	-	National Population Commission
PRTVC	-	Plateau Radio and Television Corporation
UNESCO	-	United Nations Education, Scientific and Cultural Organization
USA	-	United States of America
WDI	-	Word Development Indicators

ABSTRACT

This study was carried out to examine the utilization of "*Noma Tushen Arziki"* PRTVC radio programme among farmers in Barkin Ladi local government area of Plateau State. It also sought to determine farmers motivational factors for listening to the programme, how it influence them and the extent of adoption of knowledge they gained from the programme. Survey research method was adopted for the study.Purposive sampling technique was used to determine the respondents for this study. Structured questionnaire was used as an instrument for data collection for the study. The Diffusion of Innovation Theory was adopted for the research. The population of the study was drawn from farmers in Barikin Ladi Local Government Area of Plateau State.399 questionnaire was administered out of which 388 copies were retrieved. Analysis of data was carried out quantitatively using the descriptive data analysis. Findings reveals that, the major motivational factors that make farmers to listen to "*Noma Tushen Arziki"* radio programme in Barkin Ladi are the agricultural innovations presented in the programme, interviews conducted, programme mode of presentation and the broadcast period of the programme. Findings further indicated that, majority of the farmers in the study area gained some knowledge out of the programmes aired which has greatly influenced the farmer's agricultural practices. The study concludes that the programme has been successful in enhancing farmers knowledge in different areas of farming. Among the recommendations made in the study is that government should partner with both private sector and Non-Governmental Organizations in other to create an enabling environment for rural farmers to access loans, grant, facilities and other means of assistance that will help them apply the knowledge they gained on modern technology and innovations in their farming practice, which in turn will boost food production and alleviate poverty in rural communities.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

We are living in a world that is saturated by mass media with our environment brimming with data and information. As a result, communities and individuals are bombarded constantly with messages from mass media. These messages promote not only products, but moods and attitudes of people. In recent decades, the use of the mass media and social networks has results in heightening the level of awareness in different fields (Buren, 2000). Among the diverse mass media, radio and television, have been considered as the best cultural and educational media, largely due to their wide and vast range of viewers (Tancard & Verner, 2005).

The information sources in different aspects of agriculture for the farmers are radio, television, propaganda publication, daily farm newspapers, agriculture exhibitions, practical education, and consultation services, respectively (Ekoja, 2003). Radio is the most widespread and trusted mass media mainly due to its low cost and its ability to be carried and used everywhere. Radio is a powerful communication tool that has also proved to be the most effective media in promoting agriculture and development in rural areas (Nakabugu, 2001). Agricultural communications is indeed any development communication which accelerates interaction among farmers as well as leads to improvement in the quality of information output and confers statue or legitimacy on agricultural issues. It can also act as an institutional catalyst which, groups, organizations, institutions and governments can use to mobilize people for agricultural development (FAO, 2001). (Mboho, 2009) noted that broadcasting cannot address the problems facing agriculture in Nigeria, it can however be used to draw attention to the issues and also embark on programmes to sensitize governments and other stakeholders.

Developing countries and Nigeria can use radio broadcasting to facilitate discussions and solutions on the numerous challenges facing farmers in the country. Some of the problems faced by farmers include infrastructural problems, manpower and skill development needs, socio-cultural problems and economic problems. Others are government regulatory policies and environmental factors (Okuneye, 2002) .

Radio, given its unique features, especially the power of community radio, can be used to mobilize stakeholders towards addressing the issues facing the nation's agricultural sector. (Folarin, 2009) noted that the use of radio broadcasting in disseminating agricultural information is an example of planned communication. (McQuail, 2005) stated that this role of radio broadcasting emanates from a collective, organized source with a purpose and clearly specified objectives. Such communication through broadcast media is targeted to a specific section of the population and conforms to established norms (Ekoja, 2003). It involves consultations with the people and stakeholders at the conception of messages and programmes through interview of farmers, a music request programme interspersed with farming advice, a daily broadcast of agricultural news information among other techniques.

Venkatesan in (Mboho, 2009) identified the main roles of radio broadcasting in agriculture to include making farmers to be aware of new techniques and encourages them to approach extension agents for more details. It is one of the easiest ways of reaching a large number of farmers in a very short time and therefore useful in times of emergencies such as a large pest attack, livestock diseases, destructive erosion etc.

Radio broadcasting can be effectively used to announce meeting points, training dates, work programmes, providing farmers with information on a wide range of topics of interest to them besides technology, such as new prices, materials available in the market, agricultural policy, and changes. Through the radio, farmers in rural areas can be able to learn innovative farming

practices which they can adopt and ensure food security. Agricultural based programs on radio can be useful for the farmer, providing information that helps them to adhere to best agricultural practices. Dissemination of agricultural information can benefit farmers by enabling them to increase food production and improve land use and management.

Noma Tushen Arziki is a radio magazine programme, and a magazine is a programme which includes different kinds of items and formats such as interviews, news, live discussions, packages etc.It is a programme which incorporates a range of items and presents variety of content (Wale, 2006).Thus,(McLeish, 2005), affirms the point when he says "A magazine is usually designed with a specific audience in mind and tightly structured with emphasis on content".

The programmme is one of the oldest in the station, for over a decade the programme has never been drop even for a single quarter during the stations' quarterly progrmammes review. As its responsibility to enlighten farmers, the management of the station takes upon itself to bring information on new programmes and policies in agriculture to the teaming population of farmers in Plateau state. This is to ensure that farmers are always enlightened, especially now that agriculture is been considered as a major source of revenue for the state. The major aim of the programme is to create awareness and enlighten the farmers especially those in rural communities on new agricultural innovations that will help them improve on agricultural production.

The format of *Noma Tushen Arziki* radio programme is consistent but the content varies from one edition to another. The main features that make the programme format consistent since inception are the programme title which is "*Noma Tushen Arziki"* produced by PRTVC Plateau Radio and Television Cooperation. It's a 30 minitues programme transmitted twice a week,

Mondays between 4:30pm to 5:00pm and a repeat broadcast on Fridays between 3:30pm and 4:00pm.The programme is produced in Hausa language,the major information content is geared towards creating awareness,enlightening and persuasion of farmers to adopt new farming techniques. Interviews are also conducted on the programme with subject matter specialist,target audience (farmers) and policy makers.A traditional farming drum that depicts the communal farming system among the Plateau people serves as the programme signature tune.

1.2 Statement of the Problem

Radio is a universal medium of communication that appeals to many people. It has the ability to inform and empower society through its programming. Radio broadcasting provides a platform to the audience to express their concerns and raise questions with experts, thereby solving their problems (Buckley, 2008). In an ideal situation the radio audience should be gratified and be able to influence their community as well as improve their livelihoods**.** Agricultural information is important in bringing about change and development in rural areas. It is an essential ingredient in agricultural programmes.

The developing countries are working hard to achieve the desired progress in agricultural information services in order to boost agricultural development. One of the major problems confronting Nigeria today is how to improve the quality of life in the rural areas and reduce the level of poverty and hunger. This informs why farmers need to keep abreast of necessary information that will enhance cultivation and development surrounding crops of varied kinds (Okuneye, 2002). Such efforts at increasing information on new farming systems can make radio as a major channel since it is acclaimed to be best medium that can easily reach rural audience (Ango, Abubakar, & Buhari, 2000). Farmers constitute a particular group of information users whose needs are very specific. Information on modern agricultural innovations and technology

are not been properly put to use by farmers either because the information did not reach them or because the implementation of the received information is not clear. Bearing the place of radio in rural awareness creation in mind makes it surprising to note that a field observation by this researcher recently shows that some farmers in Barkin Ladi Local Government Area of Plateau State still carries out their farm practices using the old and indigenous systems of farming. This is happening in a community where *Noma Tushen Arziki* agricultural radio programme on PRTVC Jos have been on air since year 2000.Prior to the inception of the programme farmers in Barkin Ladi mostly rely on agricultural extension officers for information on modern agricultural practices. Festus T in (White, 2008) argues that, there are many causes to insufficient agricultural production, but there is increasing consensus that lack of communication has been one of the central problems. Communication through the radio on best agricultural practices may fill this gap.

It is on this basis that this study intends to determine the key role *Noma Tushen Arziki* radio programme is playing in promoting agriculture and its influence on farmers in Barkinladi Local Government Area of Plateau State.

1.3 Aim and Objectives of the Study

The aim of this study is to examine the impact of *Noma Tushen Arziki* radio programme on farmers in Barkin Ladi local government area of Plateau State. The specific research objectives are:

1. To determine the motivation for listening to "*Noma Tushen Arziki"* programme on PRTVC by farmers in Barkin Ladi.
2. To examine the extent to which farmers in Barkin Ladi utilize the agricultural messages aired on *Noma Tushen Arizik*i programme of PRTVC

3. To examine the influence of "*Noma Tushen Arziki"* programme on farming practices of farmers in Barkin Ladi

1.4 Research Questions

The study seeks to answer the following questions:

RQ.1. What are the motivational factors for listening to "*Noma Tushen Arziki"* radio programme on PRTVC?

RQ.2. To what extent do farmers in Barkin Ladi utilize the agricultural messages aired on "*Noma Tushen Arziki"* programme?

RQ.3.what is the influence of ""*Noma Tushen Arziki"* radio programme on farming practices in Barikin Ladi?

1.5 Significance of the Study

Many agricultural innovations have been developed by researchers and sometimes by small-scale farmers themselves. Such innovations, if adopted on a wide scale, would make a significant contribution to increasing food security and reducing poverty. Too often, these innovations are hidden in a small development project or stuck on a researchers' shelf. The challenge is to find a way to communicate these ideas to hundreds of thousands of farmers in an effective and affordable way. Although a lot of research has been done to improve agricultural productivity in in rural areas in Nigeria, performance of the agriculture sector continues to decline. The achievement of high agricultural productivity depends on the availability and access to appropriate agricultural information. It also depends on the tools of dissemination for the right target group. This study has significance in the area of communicating such new agricultural

information and innovations to farmers and how they utilize the information in their various farming practices.

It is expected that findings of the study will bring to light the place of *Noma Tushen Arziki* agricultural radio program on PRTVC in improving agricultural practice in Barkin Ladi area of Plateau state. When this is established, it will assist the Plateau State Ministry of Agriculture for planning; it will also benefit the government in making a reliable policy statement on agricultural extension services and hence form a baseline for improvement in the extension work in the state.

In the aspect of capacity building, the study will help government, agricultural institutions and partner agricultural development organizations to carefully choose stations that are willing and able to participate actively in all aspects of disseminating new agricultural "innovation" to farmers.

The study is also important in conducting participatory radio campaign research. Especially when radio partners, researchers, extension agents, and local community members find out what farmers hope to learn, their current knowledge, attitudes and practices with respect to the new agricultural innovations.

1.6 Scope of the Study

The study covered the programme *Noma Tushen Arziki*, a radio programmme on PRTVC Jos, Plateau State. It was limited to farmers in Barkin Ladi Local Government Area of Plateau State.

1.7 Limitations of the study

Every research study has challenges which may negatively affect it and which are beyond the researchers' control. One of the major limitations of the study was the frequent clashes between the farming communities and herdsmen in the district where the study was carried out and this has posed a great challenge to the researcher in trying to access the farming communities in the study area.

In spite of its advantages and strengths as a methodological tool, survey research has been criticised by some writers, who cited a variety of its shortcomings. A major disadvantage in survey research relates to its use in explanatory research. Grabe and Westley (2003) argued that, survey research does not go beyond establishing relationship between variables. They are not very suited to determining cause-effect relationships. Another weakness of survey data is that respondents can sometimes be less honest in their responses, they can give responses that they consider acceptable to the interviewer or researcher. This flaw in survey research is even more likely to happen when the issues being investigated are considered sensitive by the respondent (Berger, 1998).

1.8 Operational Definition of Terms

The following terms have been defined based on their usage in this study.

Utilization: In the context of this study, utilization refers to the action of practical and effective use of knowledge gained by farmers from listening to "*Noma Tushen Arziki"* radio programme.

Noma Tushen Arziki: It refers to an agricultural radio programme designed to enlighten and educate farmers on new agricultural technology, produced and aired by PRTVC, Jos Plateau State.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This section reviews relevant literature to this study. The review covers the conceptual studies of empirical review and theoretical framework of the study. The various topics being reviewed in this study include: radio broadcasting, radio and its impact on rural farmers, structure of *Noma Tushen Arziki* programme, potential of radio broadcasting to farmers, effective agricultural information awareness through the radio, empirical review and the theoretical framework of the study which is the diffusion of innovation theory.

2.2 Radio and agricultural development

The media have an information function that makes them play a crucial role in development. As (Chandra & Sharma, 2004)points out, 'media can play a much greater role in enabling people to take control over their own lives, in enabling people and societies to set their own agendas in relation to political, economic and social development; and in particular the voices of the economically and politically marginalized to be amplified and channeled to mainstream public and political debate'. (Scrampickal, 2006) echoes the same by stating that media such as radio, television, print and the internet can provide information creating a clear understanding of what development is and can inform a large mass of people about developmental concepts, programs and issues. He further states that the mass media provide a vast reservoir of knowledge and information serves as a tool for development and complements other development approaches. The broadcast media have a unique role to play both in enabling governance and accountability and in giving voice to poor and marginalized communities

(Buckley, 2008). Rural communities in Africa are in most cases marginalized and have no access to information that can enable them to participate in debate or express their views on issues that affect them directly. Without access to information on improving agricultural practices, rural farmers lack knowledge for them to take effective action. Festus T in (White, 2008) argues that, there are many causes to insufficient agricultural production, but there is increasing consensus that lack of communication has been one of the central problems. Communication through the radio on best agricultural practices may fill this gap.

The radio has proved to be one of the most effective mediums in promoting agriculture and development in rural areas (Hassanullah, 2010). Rural communication is an interactive process in which information, knowledge and skills relevant for development are exchanged between farmers, extension/advisory services and information providers either personally or through media such as radio, print and more recently information and communication technologies (Food and Agricultural Organization, 2006). This implies that radio can be used to pass on development messages to rural people. The aim is to put rural people in a position to have the necessary information for informed decision making and the relevant skills to improve their livelihoods .Local and community based media have a particular role in enabling rural communities to access information in their local languages. Regular transmission of radio programmes related to agriculture gives valuable information about new farming methods (Ekoja, 2003). As the farmer receives useful information on the radio, they are able to apply the new techniques gradually improving farming methods.

There are many success stories where radio has been used to enhance agricultural production. Radio Madanpokhara in Nepal broadcasts across a rural agricultural community in which few people have access to electricity or a telephone and it has become the principal means of local communication and discussion of local development (Buckley, 2008) According to an

independent listener survey, the radio contributes to improved agricultural techniques and improves access to news and information.

In Kenya, The Kenya Broadcasting Corporation has radio stations that cater for particular regions and broadcast in local languages. Some of these stations air programmes that have useful development information. In Senegal, Senegalese state radio carries better quality development programmes and caters well for local languages compared to the under-resourced community stations (Myers, 2008). In Egypt, the state radio and television are well known for their agricultural and health information.

In a research study carried out in *Kieni* west, *Nyeri* County on listeners' radio listening habits, farmers reported that they listen to agricultural programmes on the Kikuyu Vernacular stations because they provide practical information that they require in their daily farming activities (Gathigi, 2009). These agricultural programmes addressed various issues such as different diseases that affect crops and animal husbandry.

In Nigeria, a study that was carried out to determine farmers' adoption of improved agricultural Technologies disseminated through radio programmes in Enugu State found out those co-farmers And farm broadcasts were the major sources of information to many farmers (Agwu, Ekweme, & Anyawu, 2008). It was observed that 96.3 percent of the farmers accepted radio as a useful source of information on improved agricultural technologies. The radio farm programme enhanced the extent of adoption of six technologies which included modern land preparation and planting of early season crop.

In the republic of Benin radio was used to educate rural peasant farmers in the 1960's, using small listening groups called 'Radio Clubs, formation of national and departmental committees, use of village chiefs as presidents of Radio Clubs and use of animators as group leaders (Thompson & Nwaenrondu, 1987). Group discussions were carried out after listening to

the agricultural radio broadcasts. After one and a half years of experimentation, the administration of agricultural radio programs and organization of the radio clubs was reformed. Messages from the radio clubs and questions and answers of interest to the development of agriculture formed important themes for the programmes. A year later, a national seminar was organized to evaluate the achievements of the agricultural radio and the results revealed that rural radio is an effective instrument of information and education among the rural peasants.

2.3 Radio as an extension tool for agriculture

Radio can play a significant role as a tool in agricultural extension to facilitate transfer of knowledge and good farming practices to farmers. Extension is the oldest method of using communication to generate development Moemeka in (Okigbo, 1996). In Kenya there are few extension officers in the counties who serve farmers. The ratio of farmers to extension officers is 753:1(Sanga, 2013). The National Extension Policy was established due to the poor performance of the agricultural sector in comparison to its potential (NAEP 2001).

(Melkote, 2001) observes that, extension had long been and continues to be regarded as a logical and systematic method for disseminating productive and useful knowledge and skills to receivers. Radio based agricultural extension services have been introduced in various parts of Africa and the World in order to teach farmers various agricultural practices.

In Ghana radio stations in the regions devote considerable airtime to agricultural topics (Chapman, Blench, Kranjac-Berisavjevic, & Zakari, 2003). An early example of using radio for agricultural extension was the Wonsoum project. This was a grassroot development communication project in Swedru District managed by the University of Ghana Communication Department and funded by UNESCO. The project covered 18 villages and towns with a combined population of 90,000 people. Vernacular radio stations were used to broadcast in six local languages. The programme was produced in a Magazine format featuring drama, topical

talk and discussion, interspersed with jingles and traditional music. The programme was designed to combine music and drama with information from the presenter and soil, water and conservation topics discussed by a panel.

The programme captured agricultural issues in an entertaining format and aimed to highlight the importance of sharing information in farming communities through various channels of information available locally.

Simli or friendship radio operated in Northern Ghana before it was shut down by the government. It's educational and extension role was well established(Chapman et al., 2003) .The radio station provided a mix of music, drama, news and discussion programmes on local issues aimed tackling community development problems. It had agricultural extension programmes prepared by trained community radio agricultural extension officers. The extension officers visited farmers in the community and interviewed them as they discussed their problems and priorities. They then prepared a series of discussions with local experts. The officers spent at least twelve days in month recording information from farmers in the villages. The farmers were therefore highly involved in the programmes.

In Thailand, a Farm Radio pilot project was carried out whose purpose was to strengthen existing agricultural service and to obtain qualitative data on the value of radio farm forums in facilitating communication between the farmer audience and the extension service Griffin in (Thompson & Nwaenrondu, 1987). The evaluation found out that the two way flow of information between the farmer and the extension worker had improved. The frequency of farmers contact with extension agents increased and retention of information and overall learning were greatly improved because of high interest in the content and reinforcement of messages by communication channels such as radio. The extension staff and the farmer audience were extremely motivated by the Radio Farm Forum activity.

In Kenya, a number of higher education institutions carry out agricultural research that is meant to help farmers improve agricultural practices. Some of these institutions include: Jomo Kenyatta University of Agriculture and Technology (JKUAT), Moi University and Egerton University. The research findings from these universities on improved seed varieties, better farming techniques and soil management among others rarely reach the farmers who should be the target of that information. This is also the case in Nigeria where there exists a gap between research findings from universities and the rural farmers. A study was carried out to examine the role of agricultural programmes in bridging gaps existing between research findings and the farmers.

The study was carried out in Zaria Metropolitan area of Kaduna State, North Western region of Nigeria (Ango et al., 2000). The study found that most of the farmers (97.8%) obtained agricultural information through radio. The radio agricultural programmes were found to be very relevant linkages to agricultural information by majority of the farmers. The study recommended improvement of agricultural information programmes on radio and establishment of rural agricultural radio stations in the villages to disseminate agricultural information to teach farmers new science based agriculture. In other words the study recommended radio as an extension tool to bridge the gap between research findings and dissemination of the same to farmers.

In Tanzania, Farmer Voice Radio (FVR) employs a new model of agricultural extension that builds around radio extension teams supported by Information Communication Technologies (Sanga, 2013). Through a project, Farmer Voice Radio set out to identify and implement ICT options that would assist in disseminating agricultural extension services to farmers through community radio stations in a selected district of Tanzania. In the project presentation of the radio programme is done by the farmers. The farmers participate fully in identification of the topics and agenda of the programme. Farmers are involved in the development of the programme

with the help of experts in media, extension services and ICT. Farmers also participate in implementing the aired programmes in their farms.

2.4 Radio and participatory communication

In order for agricultural programmes to be effective, the producers should involve farmers in their production so that they can use the programs as a platform to address agricultural issues that affect them. Effective communication in a development process cannot be one way because it requires feedback and continuous exchange of information between partners and interest groups, communities and official entities(Food and Agricultural Organisation, 2006).

(Scrampickal, 2006) explains that the term 'participatory development communication' is often used to draw attention to an emphasis on two way communication processes, and to distance them from one way communication approaches. He further observes that participatory communication gives preference to horizontal approaches that encourage dialogue centered on problem analysis and a search for solutions as well as bottom up approaches that aim to raise the awareness of decision makers.

(Chandra & Sharma, 2004) observes that for more than fifty years radio has been the most appealing tool for participatory communication and development. He further states that radio has been instrumental for social change and has invented participatory communication as we know it today. The first participatory radio to appear in October 16th 1947 was radio Sutatenza in Colombia. The station was established by a catholic priest and it had two main objectives which were: to broaden the Christian doctrine to poor farmers and to teach skills that would contribute to community development.

(Servaes, 2002) presents the participatory model of communication whose main characteristics are: that it sees people as the controlling actors or participants for development sees people as the nucleus for development and emphasizes on the local community rather than

the nation state. This implies that the people are at the center of the development process and are expected to actively take part in development programmes.Participatory approaches are known to be effective methods in the transfer of agricultural knowledge to farmers. A case in point that proved successful was a participatory radio campaign carried out in five African Countries by Farm Radio International(Farm Radio Report, 2011).

The five African countries included Uganda and Malawi. Some of the key findings of the report were that participatory radio campaigns have unprecedented success in motivating smallholder farmers to take up improved farming practices.In communities where farmers were actively engaged in producing the campaign 39% of the farmers adopted the improved farming practice featured in the campaign. In communities where farmers had no active involvement in the campaign only 21% took up the improved farming practice. This means that if local stations involve the audience more in the production of Agricultural programs, then they may easily take up improved farming practices featured in the program. By participating in decision making over what content should be featured in the program the farmer in essence owns the program and feels a part of it.

The other key finding of the campaign was that participatory radio campaigns encourage farmers to try something new, and help them become knowledgeable about improved farming practices. The campaign shared a great deal of information about new agricultural practices from experts and experienced smallholder farmers. The more frequently the farmers' listened to the radio programs the more knowledge they gained.The campaign found out that all types of radio stations can produce effective campaigns if they have proper training and support. This is a challenge to non-governmental organizations to partner with local radio stations with wide outreach and those that are trusted by farmers so as to reach as many smallholder farmers as possible with information that will help them improve agricultural practices. Farm Radio

International partnered with community. Commercial, associative and public radio stations for the campaign. Radio as a medium of electronic mass communication has the potential to meet the information needs of the various segments of the rural farmers.(Soola, 2002) acknowledges this fact among other functions of radio development communication, thus "radio is an important mechanism for rapid diffusion of development information in diversity of languages and to a widespread often remote geographical mass". (World Bank, 2004), report on World Development Indicators (WDI) ranked radio as the most widely used information technology in Nigeria. Moreover, (Bogunjoko, 1982) and (Omenasa, 1992)affirm the point when they say "various studies have shown that radio is a very effective channel of communicating agricultural information to farmers".(Hall, 1978) buttress further that: radio is popularly used in rural agricultural communication because it can be used in areas where there are no electrical outlets. It has been used in different ways in reaching both literate and non-literate farmers of all ages, sexes, and religion to convey messages to farmers in the form of "Radio farm forums" and "open broadcast".

The foregoing assertions explain the importance of radio to rural famers.This is also attributed to its merit such as: affordability, low cost of maintenance, cheap, portable medium which allows the users to perform other activities while listening.

2.5 Potentials of Radio Broadcasting to Farmers

The strength of rural radio as an extension tool is widely regarded to lie in its ability to reach illiterate farmers provide them with information relating to all aspects of agricultural production in a language they understand. It has the potential of reaching wider coverage of farmers by giving vital information in the local language they understand. (Nwachukwu, 2003)

also add that it is easy to understand the appeal of the listeners of having local issues discussed in the accent of the local community.

According to (Chandra & Sharma, 2004), radio is the reliable medium that can cover wider area and can reach large number of people. The strength of radio as the medium of communication is that it is cost effective in terms of transmission, presentation and portability.

(Nakabugu, 2001), states that rural radio gives farmers an opportunity to interact with each other and other relevant authorities like extension workers, crop and animal experts through live talk shows. It can also be used to mobilize farmers towards community development work, information on better farming methods, improved seeds, timely planting, harvesting methods and agro-forestry among few to mention.

(Chapman et al., 2003) emphasizes that rural radio, as a tool for agricultural development should aim at bringing transformation and new knowledge to the farmers. According to (Low, 2002), information is a means of transferring ideas for better awareness to add new meaning that could change events, lives, or experiences, awareness and use of information which produce knowledge. The difference between radio and other media is that radio has wider coverage in dissemination of information to the grass root especially to farmers, which enhance productivity (Oto & Shimayohol, 2001).

The importance of famers' information literacy and awareness towards agricultural produce and food security cannot be over-emphasized.(Sokoya, Onifade, & Alabi, 2012), observed that interpersonal connectivity between farmers and radio personnel will enhance farmers information literacy, knowledge and awareness of current trend in farming that will boost faming and abundance food supply. The importance of farmers' information literacy

cannot be over emphasized as they produce what the nation need to feed her populace all year round.

There has always being contributions from research results on how agricultural production can be increased. According to (Olowu, 2011), such research results include high yielding breeds of animal, disease resistant breed of seeds and seedlings, mechanized farming and different storage means which famers must know to improve productivity and increase food security. Farmers' information literacy in this study is seen as the farmers' ability to critically think and determine the extent of his information need and be able to access available information effectively to accomplish a specific purpose in farming.

The necessary information could be useful to farmers at different stages of faming; harvesting, marketing and food storage. According to (Oladaji, 2011), storage of farm produce is not the soul duty of farmers but other stakeholders like investors who though do not have knowledge of farming but have the scientific knowledge of storage and financial capability to buy farm produce in large quantity at the peak of harvest season. Therefore, farmers need to know and plant more of such farm produce that investors are yearning for and be able to link the investor through different media; such media expressed the strategic ways of marketing farm produce after harvesting.(Daudu, 2012) observed that farmers can get needed information through different channels; majorly through agricultural extension agents, mass media, folk tales, social networking, and radio.

Different communication channels as observed by researchers are useful for good information literacy and awareness programs for farmers, but the method of such channels in delivering information is key. (Meitie & Devi, 2009) observed that different channels can be used in getting to identify types of information needs of farmers in rural areas. According to (Earmin, 2012), the use of communication channels or media is of great importance because the

knowledge of it will provide keys for understanding and predicting outcomes of communication process. It is common knowledge that the practical visual transfer of knowledge will give better understanding to farmers especially the rural farmers who are seen to be less literate.(Oto & Shimayohol, 2001), also observed that farmers in rural areas are predominantly not lettered as reading printed media was way far from use by rural farmers from whom majority of farm produce come. Therefore, it is asserted that exposure to various communication channels in farmers local language will be of help to the farmers.

2.6 Technology adoption in agriculture

Various authors define technology in different ways.(Loevinsohn, Sunberg, & Diagne, 2013) define technology as the means and methods of producing goods and services, including methods of organization as well as physical technique. According to these authors new technology is new to a particular place or group of farmers, or represents a new use of technology that is already in use within a particular place or amongst a group of farmers. Technology is the knowledge/information that permits some tasks to be accomplished more easily, some service to be rendered or the manufacture of a product (Lavison, 2013). Technology itself is aimed at improving a given situation or changing the status quo to a more desirable level. It assists the applicant to do work easier than he would have in the absence of the technology hence it helps save time and labor (Bonabana-Wabbi, 2002) Adoption on the other hand is also defined in different ways by various authors.(Loevinsohn et al., 2013)defines adoption as the integration of a new technology into existing practice and is usually proceeded by a period of 'trying' and some degree of adaptation.(Feder, Just, & Zilberman., 1990) , defines adoption as a mental process an individual passes from first hearing about an innovation to final utilization of it. Adoption is in two categories; rate of adoption and intensity of adoption. The former is the relative speed with which farmers adopt an innovation, has as one of its pillars, the element of

'time'. On the other hand, intensity of adoption refers to the level of use of a given technology in any time period(Bonabana-Wabbi, 2002). Defining technology adoption is a complicated task since it varies with the technology being adopted. For instance the study by (Doss, 2003) showed that adoption of improved seed in a survey done by CIMMYT classified farmers as adopters if they were using seeds that had been recycled for several generations from hybrid ancestors. In other studies adoption was identified with following the extension service recommendations of using only new certified seed (Bisanda, Mwangi, Verkuijl, Moshi, & Anadajayasekeram, 1998). Therefore in defining agricultural technology adoption by the farmers, the first thing to consider is whether adoption is a discrete state with binary response variables or not (Doss, 2003). That means definition depends on the fact that the farmer is an adopter of the technologies or non-adopter taking values zero and one or the response is continuous variable (Challa, 2013). The appropriateness of each approach depends on the particular context(Doss, 2003). Many researchers use a simple dichotomous variable approach in the farmers' decisions of new technology adoption. This approach according to (Jain, Arora, & Raju, 2009)is necessary but not sufficient because the dichotomous response reflects the status of awareness of improved technology rather than the actual adoption.

There exist vast literatures on factors that determine agricultural technology adoption. According to (Loevinsohn et al., 2013), farmers' decisions about whether and how to adopt new technology are conditioned by the dynamic interaction between characteristics of the technology itself and the array of conditions and circumstances. Diffusion itself results from a series of individual decisions to begin using the new technology, decisions which are often the result of a comparison of the uncertain benefits of the new invention with the uncertain costs of adopting it (Hall, 1978). An understanding of the factors influencing this choice is essential both for economists studying the determinants of growth and for the generators and disseminators of such

technologies(Hall, 1978). Traditionally, economic analysis of technology adoption has sought to explain adoption behavior in relation to personal characteristics and endowments, imperfect information, risk, uncertainty, institutional constraints, input availability, and infrastructure (Foster & Rosenzweig, 1995). A more recent strand of literature has included social networks and learning in the categories of factors determining adoption of technology (Uaiene, Arndt, & Masters, 2009). Some studies classify these factors into different categories. For example, (Akudugu, Guo, & Dadzie, 2012)grouped the determinant of agricultural technology adoption into three categories namely; economic, social and institutional factors.(Ladele, Awolola, & Ogunlade, 2008) as cited by (Lavison, 2013) broadly categorized the factors that influence adoption of technologies into Social, Economic and physical categories, the factors are categorized into, farmer characteristics, farm structure, institutional characteristics and managerial structure,(Nowak, 1987) grouped them into informational, economic and ecological, while (Babcock & Wu, 1998) classified them under human capital, production, policy and natural resource characteristics. Although there are many categories for grouping determinants of technology adoption, there is no clear distinguishing feature between variables in each category. Categorization is done to suit the current technology being investigated, the location, and the researcher's preference, or even to suit client needs(Bonabana-Wabbi, 2002). For instance the level of education of a farmer has been classified as a human capital by some researchers while others classifies it as a household specific factor. Here, the study reviewed the factors determining adoption of agricultural technology by categorizing them into technological factors, economic factors, institutional factors and household specific factors. This will enable a depth review of how each factor influences adoption as explained below.

(a) Technology factors: Characteristic of a technology is a precondition of adopting it. Trial ability or a degree to which a potential adopter can try something out on a small scale first before

adopting it completely is a major determinant of technology adoption (Doss, 2003). In studying determinants of adopting Imazapyr-Resistant maize (IRM) technology in Western Kenya, (Mignouna, Manyong, Rusike, Mutabazi, & Mutabazi, 2011)stated that, the characteristic of the technology play a critical role in adoption decision process. They argued that farmers who perceive the technology being consistent with their needs and compatible to their environment are likely to adopt since they find it as a positive investment. Farmers' perception about the performance of the technologies significantly influences their decision to adopt them. A study by (Adesina & Zinnah, 1993)showed that farmers' perception of characteristic of modern rice variety significantly influenced their decision to adopt it. A similar result was reported by (Wanji, Pouononge, Binam, & Nuogara, 2012)when studying perception of farmers towards adoption of Aquaculture technology in Cameroon. Their study indicated that perception of farmers towards fish farming facilitated its uptake. It is therefore important that for any new technology to be introduced to farmers, they should be involved in its evaluation to find its suitability to their circumstances (Karugia et al., 2004).

(b) Economic Factors: Farm size plays a critical role in adoption process of a new technology. Many authors have analyzed farm size as one of important determinant of technology adoption. Farm size can affect and in turn be affected by the other factors influencing adoption (Lavison, 2013). Some technologies are termed as scale-dependant because of the great importance of farm size in their adoption (Bonabana-Wabbi, 2002). Many studies have reported a positive relation between farm size and adoption of agricultural technology (Kasenge, 1998). Farmers with large farm size are likely to adopt a new technology as they can afford to devote part of their land to try new technology unlike those with less farm size (Uaiene et al., 2009). In addition, lumpy technologies such as mechanized equipment or animal traction require economies of size to ensure profitability (Feder et al., 1990). Some studies have shown a negative influence of farm

size on adoption of new agricultural technology. Small farm size may provide an incentive to adopt a technology especially in the case of an input-intensive innovation such as a labor-intensive or land-saving technology. Farmers with small land may adopt land-saving technologies such as green house technology, zero grazing among others as an alternative to increased agricultural production (Yaron, Dinar, & Voet, 1992). Since total farm size has an effect on overall adoption, considering the crop acreage with the new technology may be a superior measure to predict the rate and extent of adoption of technology (Lowenberg-DeBoer, 2000). A key determinant of the adoption of a new technology is the net gain to the farmer from adoption, inclusive of all costs of using the new technology (Foster & Rosenzweig, 1995). The cost of adopting agricultural technology has been found to be a constraint to technology adoption.

(c) Institutional factors: Belonging to a social group enhances social capital allowing trust, idea and information exchange (Mignouna et al., 2011). Farmers within a social group learn from each other the benefits and usage of a new technology. (Uaiene et al., 2009) suggests that social network effects are important for individual decisions, and that, in the particular context of agricultural innovations, farmers share information and learn from each other. Studying the effect of community based organization in adoption of corm-paired banana technology in Uganda,(Katungi & Akankwasa, 2010)found that farmers who participated more in community-based organizations were likely to engage in social learning about the technology hence raising their likelihood to adopt the technologies. Although many researchers have reported a positive influence of social group on technology adoption, social groups may also have a negative impact on technology adoption especially where free-riding behavior exists. (Foster & Rosenzweig, 1995)when studying adoption of Green Revolution technologies in India found that learning externalities within social networks increased the profitability of adoption, but also farmers

appeared to be freeriding on their neighbors' costly experimentation with the new technology. (Bandiera & Rasul, 2002) suggests that, learning externalities generate opposite effects, such that the more other people engage in experimentation with a new technology, the more beneficial it is to join in, but also the more beneficial it is to free-ride on the experimentation of others. Farmers need to know the existence of technology, its beneficial, and its usage for them to adopt it. Access to extension services has also been found to be a key aspect in technology adoption. Farmers are usually informed about the existence as well as the effective use and benefit of new technology through extension agents. Extension agent acts as a link between the innovators of the technology and users of that technology. This helps to reduce transaction cost incurred when passing the information on the new technology to a large heterogeneous population of farmers (Genius, Koundouri, Nauges, & zouvelekas, 2010).

(d) Household-specific factors: Human capital of the farmer is assumed to have a significant influence on farmers' decision to adopt new technologies. Most adoption studies have attempted to measure human capital through the farmer's Education, age, Gender, and household size. For instance a study by (Okunlola, Oludare, & Akinwalere, 2011)on adoption of new technologies by fish farmers and (Ajewole, 2010) on adoption of organic fertilizers found that the level of education had a positive and significant influence on adoption of the technology. This is because higher education influences respondents' attitudes and thoughts making them more open, rational and able to analyze the benefits of the new technology (Waller, Hoy, Henderson, Stinner, & Welty, 1998). This eases the introduction of a new innovation which ultimately affects the adoption process (Adebiyi & Okunlola, 2010). Age is also assumed to be a determinant of adoption of new technology. Older farmers are assumed to have gained knowledge and experience over time and are better able to evaluate technology information than younger farmers (Mignouna et al., 2011). On contrary age has been found to have a negative relationship

with adoption of technology. This relationship is explained by (Mauceri, Alwang, Norton, & Barrera, 2005) and (Adesina & Zinnah, 1993) that as farmers grow older, there are an increase in risk aversion and a decreased interest in long term investment in the farm. On the other hand younger farmers are typically less risk-averse and are more willing to try new technologies. Gender issues in agricultural technology adoption have been investigated for a long time and most studies have reported mixed evidence regarding the different roles men and women play in technology adoption (Bonabana-Wabbi, 2002). In analyzing the impact of gender on technology adoption, (Doss, 2003) had found no significant association between gender and probability to adopt improved maize in Ghana. They concluded that technology adoption decisions depend primarily on access to resources, rather than on gender and if adoption of improved maize depends on access to land, labor, or other resources, and if in a particular context men tend to have better access to these resources than women, then in that context the technologies will not benefit men and women equally. On the other hand gender may have a significant influence on some technologies. Gender affects technology adoption since the head of the household is the primary decision maker and men have more access to and control over vital production resources than women due to socio-cultural values and norms (Omonona, Oni, & Uwagboe, 2005). For instance, a study by (Obisesan, 2014) on adoption of technology found that, gender had a significant and positive influence on adoption of improved cassava production in Nigeria. His result conquered with that of (Lavison, 2013) which indicated male farmers were more likely to adopt organic fertilizer unlike their female counterparts. Household size is simply used as a measure of labor availability. It determines adoption process in that, a larger household have the capacity to relax the labor constraints required during introduction of new technology (Bonabana-Wabbi, 2002) The use of Information and Communication Technologies (ICTs) to meet the information needs of farmers is gaining momentum in the developing world and it is

becoming of primary importance to extension workers and development partners in most countries. Information and Communication Technologies (ICTs) is an umbrella term that includes computer hardware and software, digital broadcast as well as digital repositories online or offline (Jain et al., 2009). The ICTs include any communication device or application encompassing mobile-phones, digital radio, digital/satellite television, digital camera, CD ROM and personal computers.

Until recently, information systems are elitist because they were based solely on personal computers, Internet services and complicated web based programs – hardware and software that were not available, affordable and accessible to the common man, like the farmers and majority of the other stakeholders in the agricultural sector in the developing world (FGN, 2008). By introducing some level of management and value added services, these platforms can become vibrant information systems that will enhance efficiency in communication sector and reduce cost of doing business generally just like online and mobile services have transformed banking and financial service delivery. Agricultural experts have longed for increased application of ICTs in the sector. What have mainly stopped its evolution are the prohibitive costs and near impossibility of deploying and maintaining personal computers and satellite Internet services across the country.

The coming of mobile phones has offered developing countries formidable and cost-effective tools for accelerated development. In developed countries of the world and even some developing countries in Asia and Africa, the mobile phones have been used to impact economic development through applications in public administration, health care provision, agriculture, education, manufacturing, e-commerce, tourism and travels. The social and economic impacts of the mobile phone era have been compared to the industrial revolution, providing nations and

individuals alike with unprecedented opportunities to accelerate economic growth, accomplish unprecedented levels of global communication and collaboration and produce an exceptional number of dollar millionaires (Cecchini & Scott, 2006).

A nation‘s research and extension system remain the most important single determinant to the level of its agricultural development and also a yardstick to the quality of life of its people (Radhakrishna & Thompson, 2006) and research has shown e.g. (Arokoyo, 2009), no country has been known to achieve any meaningful progress in agricultural development without substantial investment in agricultural research and extension. They believe that performance of extension system has not been commensurate with the size, scope and level in the system as evidenced by poor productivity and the scandalously high food import bills as pointed out by the president of Nigeria (Arokoyo, 2009) highlighting that the more the nation agriculture forward, the extension system must be given attention to make them able to give the farmer what they need.

Several efforts were made by scholars in relating how development partners can utilize the opportunity offered by technology of integrating ICTs within extension – particularly in the rural areas. At the frontline of extension – the CTA, ICT4D for instance have been organizing international conferences towards that direction. Ken Banks of the IDG News has this to say on radio and mobile phones ―despite the excitement, radio clearly has one drawback – that listeners have no way of interacting real-time with the programmes. In an interesting twist, mobile phones might well be the perfect technology to help solve this problem.

2.7 Agricultural extension in Nigeria

Organized extension service started in Nigeria in 1954 with the Ministry operated service. This was followed by other approaches including the National Fadama Development Project-I (NFDP-I). Here the extension agent was the officer indirect contact with the farmer. It

is noteworthy that all the approaches lacked sustainability. Many scholars suggested the use of facilitation approach (Roling, 1994) to achieve sustainability in extension service delivery (PCU-SPFS/FDC-DAIMINA, 2003).

Agricultural extension was the strategy adopted in Nigeria to reach out to farmers throughout the World Bank assisted ADPs. It started with the Nigeria‘s agricultural research and extension system (NARES). According to (Arokoyo, 2003) the system _is the most important single determinant of the level of Nigeria‘s (sic) agricultural development and hence the yards stick of the quality of life of its people‘.The system evolved over four decades from a rudimentary, export crop-focused service to what can be described as a professional service and was managed by the Ministry of Agriculture in the Federal and State government level. But few years after, the ministry based extension service was found to be unable to effectively address agricultural and rural development problems.This led to the establishment of the Agricultural Development Program (ADP) (Ladele, et al., 2008), which becomes the agency responsible for public extension service delivery at the grassroots. Its establishment came with the Training and Visit [T&V] Extension System focusing strictly on communication and educational function of extension. The system recorded significant success (Ladele, et al., 2008), but could not be sustained due to its capital intensive nature and the withdrawal of its funding by the World Bank.

Although private extension service delivery was introduced at the state and local government level under the aegis of ADPs on a statewide basis, its activity is currently at low ebb. Numerous critiques of Training & Visit and other agricultural technology transfer approaches have led to _a chorus of calls for new approaches to extension.According to (Arokoyo, 2003) at the inception of the state-wide ADPs in 1980 the extension agent: Farmer (EA: Farmer), ratio ranged ―between‖ 1:2000 to 1:3000. This was expected to come down to

―between‖ 1:800 to 1:1000 by the project completion date and the withdrawal of World Bank support. This target was never achieved. He further explained that in a survey conducted by the NEARLS and PCU to ascertain the EA farmer ration in the country showed that farmer ratio in Nigeria was ―between 1:848, in Ogun State in the South- West Ecological Zone to 1:1650 in Katsina State in the North-West Ecological Zone.

This is similar to the finding by (Arokoyo, 2009), of ratio of ‘’between” 1:1000 and 1:2000 in the public extension service, and worse for the women-in-agriculture program, which was found to have several extension blocks expected to be filled by female extension agents, vacant. The success of any extension program is directly related to the level of involvement and participation of the clientele. This, having created awareness among uses of any project, the next phase will involve mobilizing farmers and getting them involved in planning and execution of the various components of the project. The ADP extension system therefore assists farmers in organizing planning and implementing conservation programs with appropriate, relevant and useful innovation from the research Institutes.

It is clear therefore, that no matter however effective, extension delivery through the village extension agent can neither be efficient nor cost-effective for a developing country like Nigeria, with a population of about 150 million, majority of who are involved in agriculture (70 – 80 percent) and illiterate. The Extension Service therefore must be appropriately supported with the use of ICTs.(Arokoyo, 2003)

Agricultural Extension is an informal education process that assists farmers in improving their farming techniques and methods, increasing production efficiency and income, bettering their standard of living and lifting their social and educational standards (Maunder, 1973). It involves the conscious use of communication of information to help farmers forming sound

opinions and making good decisions (Van den Ban & Awkins, 1996). According to Davidson and Ahmad (2003), the functions of agricultural extension may be classified into 3 main categories, which are:

1. Information dissemination
2. Technology transfer
3. Education

Also the perspective on communication has changed, according to (Servaes, 2002) it is more concerned with process and context, that is, on the exchange of _meanings,‘ and on the importance of this process, namely, the social relational patterns and social institutions that are the result of and are determined by the process. _Another‘ communication —favours multiplicity, smallness of scale, locality, deinstitutionalization, interchange of sender-receiver roles (and) horizontality of communication links at all levels of society(D. McQuail, 1994). As a result, the focus moves from a _communicator-_ to a more _receiver-centric ‘orientation, with the resultant emphasis on meaning sought and ascribed rather than information transmitted. With this shift in focus, one is no longer attempting to create a need for the information one is disseminating, but one is rather disseminating information for which there is a need. The emphasis is on information exchange rather than on the persuasion in the diffusion model.

Agricultural extension when focused on agriculture is essentially a communication process whereby various participants are linked through the exchange of information (Ladele, et al., 2008). According to them, agricultural extension addresses problems of livelihood, development and change and it is dynamic in process and application because of its problem solving orientation. It is designed to give assistance to farmers, help them identify and analyse

their production problems and become aware of the opportunity for improvement (Adams, 1982).There are basically three main functions of agricultural extension; however, what is common is that all of them involve communication (Hosenally, 2011). He opined that 3 main extension methods which involve, thus;

1. The individual method (farm visits, office calls, informal contact, and telephone calls),

2. The group method (group meetings, field demonstrations, conducted tours, seminars etc.); and

3. The mass media (newsletters, pamphlets/leaflets, radio talk, TV programmes etc.) and now the mobile-phones.

However, while choosing the extension method to be used, the Extension Officers or development partners must analyse the situation well and consider several points before coming to a final decision. Ideally the best choice is to combine the different extension methods that are available and the choice is made depending on the topic, the target group, and the resources available (Hosenally, 2011). However, apart from these extension methods, another means to communicate to farmers and other stakeholders in agriculture would be the use of ICTs (Hosenally, 2011).

2.8 Challenges of agriculture and rural development in Nigeria

Agriculture is an important component of most rural economies especially in the developing countries. It was shown above that the size of agriculture within the local economy is sometimes used to define rurality. Therefore, any successful rural development strategy will contain an agricultural development component; but they are not the same thing. While agricultural development aims at improving the welfare of populations through sustained

improvements in the productivity of the agricultural sector, rural development aims at the improvement of welfare of rural populations through the sustained growth of the rural economy, which includes agriculture, but may not be its only component and not necessarily the most dynamic (Maunder, 1973).

Agriculture in Nigeria is the most important sector of the economy from the standpoint of rural employment, sufficiency in food and fiber, and export earning prior to the discovery of oil. The above assertion is based on the fact that as at independence in 1960, little was known of petroleum as a source of revenue for the Nigerian economy. There was sustained emphasis on agriculture to the extent that Nigeria was a major exporter of such agricultural products as palm produce, cocoa, groundnut, cotton and rubber. In addition to these cash crops, the national agricultural system was able to produce enough of food crops like yam, cassava, maize, millet, sorghum and soya beans to the extent that there was almost no need for food importation. Hitherto, agriculture accounted for over 60% of the Nation's Gross Domestic Product (GDP). However, with the advent of petroleum in the early 1970s, petroleum became the country's major foreign exchange earner and agriculture became grossly neglected (Oni, 2008).

Agriculture contributes immensely to the Nigerian economy in various ways, namely, in the provision of food for the increasing population; supply of adequate raw materials to a growing industrial sector; a major source of employment; generation of foreign exchange earnings; and, provision of a market for the products of the industrial sector (Okumadewa, 1997). The agrarian sector has a strong rural base; hence, concern for agriculture and rural development become synonymous, with a common root.

The major problems of rural areas in Nigeria are summarized as, inadequate levels of agriculture productivity particular in food crop; high levels of absolute and rural poverty; and

poor level of infrastructure facilities (Shiru, 2008). The fundamental problems facing agricultural mechanization in Nigeria include adoption of mechanization strategies which are often proffered by government and international agencies that do not pay sufficient attention to the interests of the local farmers and to the processes of technological change (Kutte and Tya, 2001).

Since independence, Nigeria has spent, billions of naira on agricultural development. An assessment of different development plans and annual budget shows that there is no corresponding evidence of what the huge sums of money were spent on especially when we critically look at human development. Nigeria has essentially remained a poor country (Onwalu, 2003).

Inadequate funding of agriculture in Nigeria has aggravated rural poverty in Nigeria. Some social indicators can be used to emphasis this point. These include population growth rate (3.5%), life expectancy (50years), adult literacy rate (45%), human development index (0.2%), and percentage of labor force in agriculture (60%) (Shiru, 2008). The values of these indices show that Nigeria among the least developed countries of the world.In order to achieve the broad goals of agricultural and rural development, the Nigerian government usually focuses on specific objectives. While the attainment of specific agricultural goals encompasses the provision of adequate food, fibers and industrial raw materials, employment and foreign exchange generation, the goals of rural development embrace in addition a systematic improvement of the other institutional, physical and social infrastructures in such rural communities (Titilola, 2008).The Nigerian agricultural sector is predominantly dominated by resource-poor farmers who still practice the traditional or subsistence agriculture in which simplest traditional tools are being used, output and productivity are low, capital investment is minimal while land and labor constitute principal factors, thus culminating in the "law of diminishing return" – high labor and

input applications but low returns. In order to reverse this trend, agriculture in Nigeria needs to be practiced and managed on a sustainable basis (Titilola, 2008).

2.9 Empirical Review

In his study (Oyedele, 2007) reveals that 64.9% of farmers in the southwestern Nigeria preferred radio as a source of agricultural information. However, he says since radio is one of the major sources of information to farmers on citrus technology, there should be more radio programme that will educate the farmers.

More so, (Oyinbe, 2012) reveal that radio has been found to be more useful to farmers in terms of dissemination of information on power agricultural technology. Also, findings reveal that agricultural radio programmes should be relevant to the type of farming the communities are involved in, (Abubakar, 2000) discovered that 85% of farmers in Birnin Kebbi Local Government Area of Kebbi State received their agricultural information from radio. They affirm that radio is considered as a source of information to the rural populace and has become an important communicating tool to the farmers in rural areas.

(Bashir, 2008) found out that the common sources of agricultural information that have been used are the radio,television,extension services,magazines,newspapers and face-to face communication.Lately,research institutions have embraced the modern sources of information such as the internet, especially online databases, journals and articles that have made information more readily available, accurate and timely. These modern sources have been used within research institutions and extension service units, but their effectiveness in availing information to farmers have been criticized. It is thought that the modern sources of information have social, educational, economic, cultural and technical constrains which limit effectiveness in disseminating agricultural information to farmers.

In his study (Adamu, 2007) discovers that radio is the most potent medium for reaching grass root farmers. He found that 80% of the Northern farmers have access to radio set and they spend time to listen to its agricultural broadcasting at all point on airing. He also, posits that radio has helped a lot in restructuring the way farmers engage in their farming activities.

In their study (Kughur, Dauda, & Onu, 2011), establish that 45.8% of the respondents got information concerning poultry farming through the radio, they affirm that among all the medium of communication, radio is rated high. (Oyero, 2013) in his study on "Indigenous Language Radio for Development Purpose" discovers that 72% of his respondents, including those who were literate, want radio to broadcast in their indigenous language.(Ango et al., 2000) in their study reveals that various agricultural development projects in the country relied on radio broadcast as a means of carrying out grass roots extension work. He affirms that a number of research institutes including universities are also using radio as a tool for disseminating research information.

Study conducted by (Food and Agricultural Organisation, 2006) has found that farm radio has contributed in terms of strengthening social unity, enhancing communicative ability, and solving the problems of the farmers. The study recommends that farm radio should be used extensively to create awareness to farmers especially on new farming technology.

2.10 Theoretical Framework

This explains the structure that holds and support the theory used for this research study. The theoretical framework introduces and describes the theory that explains why the research problem under study exists.

Diffusion of Innovation Theory

The research is anchored on the Diffusion of Innovation theory. The theory was propounded by Everett Rogers in 1960. The theory explores the flow of information and personal influence in several fields such as rural agricultural extension work. However, the basic assumptions of the theory are that, diffusion research centers on the conditions which increase or decrease the likelihood that new idea, product, or practice will be adopted by members of a given culture. Diffusion of innovation theory also predicts that media as well as interpersonal contacts provide information and influence opinion and judgment. Thirdly, opinion leaders exert influence on audience behavior via their personal contact, but additional intermediaries (called change agents and gatekeeper) are also included in the process of diffusion. The fourth basic assumption is that the information flow through networks; the nature of networks and the roles opinion leaders play in them determine the likelihood that the innovation will be adopted.

Hence,(Defleur & Dennis, 1996), note that the diffusion of innovation theory is a very important theory in studying mass communications issues because each of the major mass media was originally an innovation that came to be adopted and widely used and the media are often largely responsible for bringing new ideas to the attention of people who eventually adopt them.

According to Roger & Shoemaker (1971), cited in (Anaeto, 2008), the premises of the adoption theory were based on five (5) stages:

a. Knowledge –exposure to an innovation and some understanding of how it functions;
b. Persuasion-formation of an attitude towards the innovation;
c. Decision-activity resulting in a choice to adopt or reject the innovation;
d. Implementation-putting the innovation to use; and

e. Confirmation-reinforcement or reversal of the innovation decision

This is to say, the farmers require knowledge about innovation or new development initiative from the mass media (McQuail, 1994), asserts that "the media have brought messages of what is new and fashionable in terms of ideas, techniques and values from city to country''.However, the comprehension of the media messages on innovations and development initiatives is influenced by some antecedents in the social system of the audience in the society.

The information received from mass media about development initiatives will persuade the target audience to develop favorable or unfavorable attitude toward a particular innovation. This is why persuasive information on the innovation is believed to motivate the target audience (farmers) to take decision whether to adopt or reject new agricultural ideas.

However, the individuals (farmers) will implement the innovation and continue to seek for confirmation and clarification about decision they have made about the innovation from the facilitators.(Moemeka, 1989), adds that "those in charge of planning development communication must be those who understand the social structure, those who have entered the socio-cultural context of the people and how change can take place in it-not merely how development messages can be disseminated.

2.11 Justification of the Theory

The theory is relevant to this work because it will enable the researcher to explain how farmers in Barkin Ladi Area of Plateau State perceived *Noma Tushen Arziki* and responded to the innovation transmitted in the programme through the five stages of the theory. Receiving knowledge about the innovation and how it functions is the first stage of the adoption of innovation theory. However, in the context of this study the farmers are exposed to the

innovations from *Noma Tushen Arziki* radio programme and other interpersonal means of communication. "The typical individual gains initial knowledge of the innovation mainly from the mass media channels" (M. Rogers & Shoemaker, 1971). The type of knowledge received by farmers will be determined by their social characteristics.

As the notion of innovation becomes clear, the second stage of the adoption theory is persuasion. In the context of this study, the farmers will be persuaded to develop a favorable or unfavorable attitude toward the enlightment issues, based on the kind of persuasive messages they received about the innovation from *Noma Tushen Arziki* programme. These include detailed information about the process for utilizing the innovation and the specific advantages of the innovation. After developing a particular attitude toward the innovation, the third stage of the adoption theory is the decision function. In this context, the farmers would take decision to adopt or reject the enlightments based on the kind of information they continue to receive about the innovation from *Noma Tushen Arziki* programme.

In the same vein, the fourth stage of the adoption theory is implementation. In the context of this study, the farmers after taking decision to adopt or reject the enlightment based on the specific information received. They then put the information to use. Finally, the last stage of the adoption theory is confirmation. The farmers continue to seek for detailed information about the innovation for an unspecified time. (M. Rogers & Shoemaker, 1971), say "the confirmation stage continues after the decision to adopt or reject for an indefinite period of time''. The farmers continue to seek for clarification and reinforcement about the earlier decision they made on the farming enlightment issues. Also, the conflicting messages they heard about the innovations may lead to the reversing of the earlier decision about the innovation. The farmers received the confirmation messages about the enlightment from *Noma Tushen Arziki radio* programme.

2.12 Limitations of the Theory

The criticisms of the DOI theory initially focused on methodological problems with the research (Ruttan, 1966), but interest in the theory declined as it began to be viewed as a source of inequity among farmers.(Goss, 1979) observed that the application of innovation diffusion theory in developing countries had undesirable consequences. These problems, according (Stephenson, 2003) stemmed from the following:

- It is assumed that benefits resulting from the adoption of innovations spread and become homogeneous. But experience from Latin America showed the gap in inequities actually widened.
- Aggregate statistics for development projects may show improvement in elements like production, but commonly the farmers most in need of help received little benefit.
- Non-adopters are affected by the diffusion of innovations process because larger farmers increase production as a result of adopting an innovation, resulting in a decrease in prices received by all farmers.

Everett Rogers, the father of innovation diffusion theory, periodically summarizes the literature (1962; 1971; 1983; 1995). In the 1983 edition, he acknowledges criticisms of the theory, noting that the absence of critical viewpoints in the early development of the theory may have been a weakness in the long run. Had adjustments been made earlier through critique and debate, perhaps some of the current problems with the theory would have been avoided. Criticism compiled in the most recent edition (Rogers, 1995) includes:

1. A pro-Innovation Bias

There is the implication that an innovation should be diffused and adopted by all farmers. The act of innovation is considered positive and the act of rejecting an innovation is consired negative. Remember the categories of adopters: Innovators versus Laggards.

2. Individual-Blame Bias

   The development agency is not blamed for its lack of response to the needs of farmers. Rather; the individuals who do not adopt the innovations are blamed for their lack of response.

3. Issue of Equality

   The negative impacts of the theory are not considered. What are the consequences in terms of unemployment, migration of rural people, and equitable distribution of incomes? Will the innovation widen or narrow socio economic gaps?

4. Bias in favour of Larger and Wealthier Farmers

   Development agencies tend to provide assistance especially to their innovative, wealthy, educated, and information-seeking client .Following this progressive diffusion strategy leads to a lower degree of equality. For Example, more progressive farmers are eager for new ideas, and have the economic means to adopt; they can also more easily obtain credit if they need it. Because they have larger farms, the direct effect of their adoption on total agricultural production is also greater (Rogers, 1995).Consequently, the rich get richer and poor get poorer.

Despite the criticisms, based on the theory‘s assumptions and its general tenets, this study finds the Diffusion of Innovation as the theoretical framework of this study. This is because it is relevant in understanding the process of change that occur in the way people communicate due to the change in technology and the way these changes affect societies and how societies adopt or reject these new changes. It serves to direct the attention of innovators to those factors directly

influencing the uptake of an innovation and guide them in understanding those factors so that the uptake can be influenced through those factors (Chigona & Licker, 2008)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the method of data collection as well as the analysis of the data. It presents the research design, the study area, the population, sampling procedure, the sample, the research instruments, validity and reliability of the research instruments and methods of data analysis

3.2 Research method

The research method that was adopted for this research is survey research method. (Barrie, 2000)defines survey as "a form of quantitative research that involves asking large number of people about their behaviors, attitudes, beliefs, personality characteristics and other personal details".Survey is an empirical study that employs the use of questionnaires or interviews to investigate and describe an occurrence, an issue or a phenomenon (Bums, 2000).

Survey research has been found to be easy to employ, and it rates high on reliability (Singleton, 1994). Survey research has remained a useful methodological tool for researchers and scholars. As for its advantages in research, survey has been effective for social description, and they provide detailed information. Survey also provides accurate and reliable data. Also, it is very useful, convenient and suitable for collecting large amounts of data (Singleton, 1994).

This research used the survey technique because of its strengths and suitability for the study. As noted by (Reinhard, Bolliger, & Zellweger, 1994), survey offers the researcher the opportunity to have a broader outlook of an issue or phenomenon, while employing the scientific means. It is justified in this study because, it is a method suitable for gathering information from

a large number of respondents on a given issues. In the data gathering, quantitative research methodology was employed. In this thesis research, the data collected on farmers, using the survey design, enabled the researcher to describe the characteristics of the farmers, their radio listening habits in relation to *Noma Tushen Arziki* radio programme on PRTVC, as well as establishing the farmers' level of adoption of technology aired on the programme.

3.3 Population of the study

The population of the study was drawn from farmers in Barkin ladi Local Government Area of Plateau State. The reason for using farmers for the study was that they are the economically active people in the rural communities. In relation to agriculture, they are those who are actively engaged in crop and animal farming.

Farmers for this study are small-scale rural farmers, who have small farm holdings and mostly rely on public service extension officers, local radio and interpersonal communication channels for messages on agriculture and rural development. Also, these small scale farmers rely most on radio for information and knowledge on agriculture, health, politics, rural and community development. Radio means a lot to them, and they rely more on it than any other form of mass media for information.

3.4 Sampling Technique

The purposive sampling technique was used for this study. The essence is to ensure equal participation or representation among the farmers. Further,the approach was used for this study because it gives all the population equal chance of been selected (Ujo, 2000) and it is usually recommended for survey and other opinion based research, the respondents are selected because they possess some peculiar characteristics and qualities needed by the researcher. Purposive

sampling may also be used with both qualitative and quantitative research techniques. The method is robust even when tested against random probability sampling. Choosing the purposive sample is fundamental to the quality of data gathered; thus, reliability and competence of the informant must be ensured (Bernard, 2002)

In this study, purposive sampling was employed at the level of selection of the samples for the study and respondents for the key informant interview. Only officials of the PRTVC and Extension workers in Barkin ladi Local Local Government Area were selected for the qualitative research. For the quantitative research the samples were drawn from the population of farmers in Bakin Ladi Area.

3.5 Sample Size

To get the sample size from the population Taro Yamene's formula $n = N/(1 + Ne^2)$ cited in (Ogbuoshi, 2010) was utilized into consideration. The formula provided a simplified calculation to arrive at the required sample size at 95% confidence level. The total population of Barkin Ladi according to 2006 census is 175,267 people. Therefore in selecting the sample the study used the following formula

$$n = \frac{N}{1+Ne^2} \qquad \ldots\ldots\ldots\ldots\ldots\ldots 3.1$$

Where n is the sample size and N is the population and *e* is the level of precision

$$n = \frac{175267}{1+175267(0.05)^2} \qquad \ldots\ldots\ldots\ldots\ldots\ldots 3.2$$

$$n = \frac{175267}{439.17} \qquad \ldots\ldots\ldots\ldots\ldots\ldots 3.3$$

Therefore n=399 (Appr.)

From the formula, the study was able to arrive at 399 sample size selected.

To select the 399 respondents for the study in the five districts of Barkin ladi local government, 4 villages in each district were selected as follows: In Fan district: Rafan, Nwok, Tafan and Dafiyona were selected. In Foron District: Sho, Kapwis, Zabot, and Nofok villages were chosen. In Gashish: Kurra Falls, Exland, Kuzen and Rakum villages were selected while in Heipang: Chit, Kpang, Pwomol and Tapo villages were selected and finally in Ropp district, Mozot, Marit, Gana Ropp and Jok villages were selected. Thus a total of 20 rural villages were selected for the study. In each of the 20 communities, 10 percent of their agric households were sampled. A total of 400 agric households were therefore sampled for the survey research. In each of the households the first adult farmer who happened to be the first the researcher met, was given the questionnaire to fill, provided the person's age was 18 and above years, and also provided the person owned a farm.

The villages were selected from their various districts using a simple random sampling. The facilitator provided the names of the villages and the researcher wrote the names of the villages and squeezed the papers and threw them on the ground. The villages in all the districts were selected using that procedure.

3.6 Data gathering instrument

In this study, the main instruments used for data collection were structured questionnaire. The questionnaire was carefully designed so as to allow easy way of gathering relevant data required for the analysis of the objectives advanced in Chapter One. The decision to use questionnaire was arrived at considering the spread of the population and nature of data to be collected.

The questionnaires were administered through the process of purposive sampling. Since the focus of the study is to look at the role *Noma Tushen Arziki* radio program is playing in promoting agriculture in Barkin Ladi area. Out of the 399 questionnaires distributed, however only 388 questionnaires were retrieved. The questionnaire comprised of two sections and data generated was presented as follows:

The first section comprises of biographic data such as age, sex, level of education and occupation.The second section comprises of data intended to measure the respondents' motivation for listening to *Noma Tushen Arziki* agricultural programme, how it influence them and the extent of adoption of the knowledge they acquire.

3.7 Procedure for Data Collection

Primary data were used for this study. The primary data were collected through the use of questionnaire administration.

3.8 Validity and Reliability of the Instrument

A pilot study was conducted in Heipang district, in Barkin Ladi local government area for the quantitative research, 40 copies of the questionnaire representing 10% of the sample was administered, which were duly completed and returned. Data collected was analysed, the result obtained affirms the reliability of the instrument. This affirms that the instrument tested is reliable and therefore it can be used for this study. The purpose of the pilot study was to determine the reliability of the instrument before administration, assess the feasibility of the study, and identify problems or difficulties that respondents may encounter with a view to eliminating them in the final instrument. The questionnaire was subjected to scrutiny by relevant research expert for necessary observations and corrections.

3.9 Method of Data Analysis and Presentation

The data were analysed using percentages, tables, frequencies and charts. The Statistical Package for Social Sciences (SPSS), Version 14 sub-programme was used in achieving this. This gives opportunity for easier computation of the data gathered.(Ujo, 2000) noted that descriptive data analysis are used for descriptive studies such as questionnaires, so that data derived from the respondents can be summarized in clear simple terms.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

This chapter presents the analysis and discussion of data collected for the research survey. It also provides answers to the research questions and objectives raised for the study. The data were analyzed by using the Statistical Package for Social Sciences (SPSS), Version 14 sub-programme. The researcher gave out a total of 399 questionnaires to respondents selected for the study of which 388 questionnaires were retrieved back from the respondents at the end of the survey.

4.2 Quantitative data presentation

This section provides the socio-demographic characteristics of the respondents and the responses to questions asked in the questionnaire. Analysis and explanations followed the table and the figures.

Table 4.1 Sex of the respondents

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	224	57.7	57.7	57.7
	Female	164	42.3	42.3	100.0
	Total	388	100.0	100.0	

Table 4.1 shows the sex distribution of respondents that participated in this research survey. The table shows that 224 (57.70%) of the respondents were males, while 164 (42.30%) were females. This implies that majority of those that participated in the research survey were males

Table 4.2 Age of the respondents

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(18-24) years	76	19.6	19.6	19.6
	(25_30) years	145	37.4	37.4	57.0
	(31-36) years	98	25.3	25.3	82.2
	37 years and above	69	17.8	17.8	100.0
	Total	388	100.0	100.0	

Table 4.2 shows the age distribution of respondents that participated in this research survey. The table shows that 76 (19.60%) were in the age category "18-24 years"; 145 (37.40%) were in the age category "25-30 years"; 98 (25.30%) were in the age category "31-36 years", while 69 (17.80%) were in the age category "37 years and above". This implies that majority of those that participated in the research survey were youthful people in the age category "25-30 years".

Table 4.3 Educational background of the respondents

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary school	55	14.2	14.2	14.2
	Secondary school	223	57.5	57.5	71.6
	Diploma and above	83	21.4	21.4	93.0
	None	27	7.0	7.0	100.0
	Total	388	100.0	100.0	

Table 4.3 shows the educational background distribution of respondents that participated in this research survey. The table shows that 55 (14.20%) had primary school background; 223 (57.50%) had secondary school background; 83 (21.40%) had tertiary educational background,

while 27 (7.0%) had other educational background. This implies that most people in this area have secondary educational background.

Table 4:4 Farming occupations of the respondents

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Livestock farming	51	13.1	13.1	13.1
	Irrigation farming	27	7.0	7.0	20.1
	Crop farming	298	76.8	76.8	96.9
	Aquatic farming	12	3.1	3.1	100.0
	Total	388	100.0	100.0	

Table 4.4 shows the occupational distribution of respondents that participated in this research survey. The table shows that 51 (13.10%) were livestock farmers; 27 (7.00%) were irrigation farmers; 298 (76.80%) were into crop farming, while 12 (3.10%) were into aquatic farming. This implies that majority of those that participated in the research survey were crop farmers.

Table 4.5 Age group * Farming Occupation Cross tabulation

		Farming Occupation				
		Livestock farming	Irrigation farming	Crop farming	Aquatic farming	Total
Age group	(18-24) years	20	25	28	3	76
	(25_30) years	30	2	113	0	145
	(31-36) years	0	0	92	6	98
	37 years and above	1	0	65	3	69
Total		51	27	298	12	388

From the table above, majority of the respondents within the ages of 25 -30 years (113) and 31-36 (92) are majorly crop farmers. While Irrigation and livestock farming within the ages of 31-36 (0) and 37 (0) years recorded zero participation.

Table 4.6: Respondents listenership to the programme *Noma Tushen Arziki* because of the programme presenter

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	69	17.8	17.8	17.8
	Agree	217	55.9	55.9	73.7
	Neither agree nor disagree	39	10.1	10.1	83.8
	Disagree	46	11.9	11.9	95.6
	Strongly disagree	17	4.4	4.4	100.0
	Total	388	100.0	100.0	

Table 4.6 shows the distribution of responses on whether farmers listen to the radio programme because of the programme presenter. The table shows that 69 (17.80%) strongly agreed that they listen to the programme because of the presenter; 217 (55.90%) agreed; 39 (10.00%) neither agreed nor disagreed, 46 (11.90%) disagreed while 17 (4.40%) strongly disagreed. This implies that most people agreed that they listen to the programme because of the programme presenter.

Table 4.7: Respondents listenership to the programme *Noma Tushen Arziki* because of the mode of presentation

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	127	32.7	32.7	32.7
	Agree	199	51.3	51.3	84.0
	Neither agree nor disagree	38	9.8	9.8	93.8
	Disagree	15	3.9	3.9	97.7
	Strongly disagree	9	2.3	2.3	100.0
	Total	388	100.0	100.0	

Table 4.7 shows the distribution of responses on whether farmers listen to the radio programme because of its mode of presentation. The table shows that 127 (32.70%) strongly agreed that they listen to the programme because of its mode of presentation; 199 (51.30%) agreed; 38 (9.8%) neither agreed nor disagreed, 15 (3.90%) disagreed while 9 (2.30%) strongly disagreed. This implies that most farmers agreed that they listen to the programme because of its mode of presentation.

Table 4.8: Respondents listenership to the programme *Noma Tushen Arziki* because of the musical interlude

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	19	4.9	4.9	4.9
	Agree	147	37.9	37.9	42.8
	Neither agree nor disagree	172	44.3	44.3	87.1
	Disagree	35	9.0	9.0	96.1
	Strongly disagree	15	3.9	3.9	100.0
	Total	388	100.0	100.0	

Table 4.8 shows the distribution of responses on whether respondents listen to the radio programme because of its musical interlude. The table shows that 19 (4.90%) strongly agreed that they listen to the programme because of its musical interlude; 147 (37.90%) agreed; 172 (44.3%) neither agreed nor disagreed, 35 (9.00%) disagreed while 15 (3.90%) strongly disagreed. This implies that most farmers neither agreed nor disagree that they listen to the programme because of its musical interlude.

Table 4.9: Respondents listenership to the programme *Noma Tushen Arziki* because of the broadcast period

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	85	21.9	21.9	21.9
	Agree	250	64.4	64.4	86.3
	Neither agree nor disagree	16	4.1	4.1	90.5
	Disagree	29	7.5	7.5	97.9
	Strongly disagree	8	2.1	2.1	100.0
	Total	388	100.0	100.0	

Table 4.9 shows the distribution of responses on whether farmers listen to the radio programme because of its broadcast period. The table shows that 85 (21.90%) strongly agreed that they listen to the programme because of its broadcast period; 250 (64.40%) agreed; 16 (4.10%) neither agreed nor disagreed, 29 (7.50%) disagreed while 8 (2.10%) strongly disagreed. This implies that most farmers agreed that they listen to the programme because of its broadcast period.

Table 4.10 Respondents listenership to the programme *Noma Tushen Arziki* because of the interviews conducted in the programme

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	273	70.4	70.4	70.4
	Agree	98	25.3	25.3	95.6
	Neither agree nor disagree	10	2.6	2.6	98.2
	Disagree	7	1.8	1.8	100.0
	Total	388	100.0	100.0	

Table 4.9 shows the distribution of responses on whether farmers listen to the radio programme because of the interview conducted in the programme. The table shows that 273 (70.40%) strongly agreed that they listen to the programme because of the interview conducted on the programme; 96 (24.70%) agreed; 9 (2.30%) neither agreed nor disagreed, 8 (2.10%) disagreed while 2 (0.50%) strongly disagreed. This implies that most farmers strongly agreed that they listen to the programme because of the kind of interviews conducted in the programme.

Table 4.11: Respondents listenership to the programme *Noma Tushen Arziki* because of the agricultural innovation presented

variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	187	48.2	48.2	48.2
	Agree	133	34.3	34.3	82.5
	Neither agree nor disagree	52	13.4	13.4	95.9
	Disagree	9	2.3	2.3	98.2
	Strongly disagree	7	1.8	1.8	100.0
	Total	388	100.0	100.0	

Table 4.11 shows the distribution of responses on whether farmers listen to the radio programme because of the innovations presented in the programme. The table shows that 187 (48.20%) strongly agreed that they listen to the programme because of innovation presented in the programme; 133 (34.30%) agreed; 52 (13.40%) neither agreed nor disagreed, 9 (2.30%) disagreed while 7 (1.80%) strongly disagreed. This implies that most farmers strongly agreed that they listen to the programme because of the innovations aired in the programme

Table 4.12: Respondents listenership to the programme *Noma Tushen Arziki* because of the signature tune of the programme

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	31	8.0	8.0	8.0
	Agree	132	34.0	34.0	42.0
	Neither agree nor disagree	161	41.5	41.5	83.5
	Disagree	39	10.1	10.1	93.6
	Strongly disagree	25	6.4	6.4	100.0
	Total	388	100.0	100.0	

Table 4.12 shows the distribution of responses on whether farmers listen to the radio programme because of the signature tune of programme. The table shows that 31(8.00%) strongly agreed that they listen to the programme because of signature tune of the programme; 132 (34.0%) agreed; 161 (41.50%) neither agreed nor disagreed, 39 (10.10%) disagreed while 25 (6.40%) strongly disagreed. This implies that most farmers strongly agreed that they listen to the programme because of the signature tune of the programme

Table 4.13: How frequent do respondents listen to the programme

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Regularly	237	61.1	61.1	61.1
	Sometimes	91	23.5	23.5	84.5
	Very rare	18	4.6	4.6	89.2
	Once in a month	42	10.8	10.8	100.0
	Total	388	100.0	100.0	

Table 4.13 shows the distribution of responses on how often respondents listen to the programme *Noma Tushen Arziki*. The table shows that 237 (61.10%) indicated that they listen to the programme regularly; 91 (23.50%) indicated that they listen to the programme sometimes; 18 (4.60%) indicated that they rarely listen to the programme while 42 (10.80%) indicated that they listen to the programme once a month. This implies that those who say they listen to the programme "regularly" constitute the majority.

Table 4.14 How often the respondents refer to the messages aired in *Noma Tushen Arziki* radio programme in their farming practice

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Regularly	197	50.8	50.8	50.8
	Sometimes	135	34.8	34.8	85.6
	Rarely	56	14.4	14.4	100.0
	Total	388	100.0	100.0	

Table 4.14 shows the distribution of responses on how often respondents refer to the messages presented in *Noma Tushen Arziki* radio programme in farming practices. The table shows that 197 (50.80%) indicated that they refer to the messages presented in the programme regularly in their farming practice; 135 (34.80%) indicated that they refer to the messages presented sometimes; while 56 (14.40%) indicated that they rarely refer to the messages presented. This implies that those who say that they regularly refer to the messages presented in the programme constitute the majority

Table 4.15: Kind of agricultural innovations received on *Noma Tushen Arziki* radio programme by the audience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Crop farming	219	56.4	56.4	56.4
	Post- havest farming activities	53	13.7	13.7	70.1
	Livestock farming	106	27.3	27.3	97.4
	Aquatic farming	10	2.6	2.6	100.0
	Total	388	100.0	100.0	

Table 4.15 shows the distribution of responses on the kind of agricultural innovations respondence received in *Noma Tushen Arziki* radio programme in farming practices. The table shows that 219 (56.40%) indicated that they received new agricultural innovations on crop farming; 52 (13.40%) indicated that they receive new innovations on post-harvest farming activities; 106 (27.30%) indicated that they receive innovations on livestock farming while 11 (2.90%) indicated that they receive innovations on aquatic farming. This implies that most farmers who receive agricultural innovations on crop farming constitute the majority.

Table 4.16: How respondents discuss issues raised in *Noma Tushen Arziki* radio programme

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	With friends	148	38.1	38.1	38.1
	With family member	89	22.9	22.9	61.1
	With members of farmers cooperative society	59	15.2	15.2	76.3
	All of the above	92	23.7	23.7	100.0
	Total	388	100.0	100.0	

Table 4.16 shows the distribution of responses on how respondents discuss issues raised in *Noma Tushen Arziki* radio. The table shows that 148 (38.10%) indicated that they discuss issues raised on the programme with their friends; 89 (22.90%) indicated that they discuss issues raised on the programme with their family members; 59 (15.30%) indicated that they discuss it with members of farmers cooperative society while 92 (23.70%) indicated that they discuss issues raised on the programme with friends,family members and farmers cooperative society. This implies that those farmers who discuss issues raised in the programme with their friends constitute the majority.

Table 4.17: Respondent's reason for listening to *Noma TushenArziki* radio programme

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Enlightment issues on agriculture	113	29.1	29.1	29.1
	Educative issues on agriculture	217	55.9	55.9	85.1
	Mobilization issues on agriculture	33	8.5	8.5	93.6
	Entertaiment issues on agriculture	5	1.3	1.3	94.8
	All of the above	20	5.2	5.2	100.0
	Total	388	100.0	100.0	

Table 4.17 shows the respondent's reasons for listening to *Noma Tushen Arziki* radio programme. The table shows that 113 (29.10%) indicated that they listen to programme because of enlightment issues on agriculture; 217 (55.90%) indicated that they listen to the programme because of educative issues on agriculture; 33 (8.50%) indicated that they listen to the programme because of the mobilization issues on agriculture; 5 (1.30%) indicated that they listen to the programme because of agricultural entertainment issues while 20 (5.20%) indicated that they listen to the programme because of all of the earlier mentioned factors. This implies that those who listen to the programme because of educative issues on agriculture constitute the majority.

Table 4.18: Respondents preferred time for the programme broadcast

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	First broadcast only	96	24.7	24.7	24.7
	Repeat broadcast only	231	59.5	59.5	84.3
	All of the above	61	15.7	15.7	100.0
	Total	388	100.0	100.0	

Table 18 show the respondents' proffered time for listening to the programme *Noma Tushen Arziki*. The table shows that 96 (24.70%) indicated that they listen to the first broadcast only; 231 (59.50%) indicated that they listen to the repeat broadcast of the programme while 61 (15.70%) indicated that they listen to both the first and repeat broadcast of the programme. This implies that those who listen to the first broadcast of the programme constitute the majority.

Table 4.19: Respondents views on areas in the programme that needs improvement as regards to awareness in facilitating their farming need

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Grants and loans	151	38.9	38.9	38.9
	Access to fertilizer	93	24.0	24.0	62.9
	New machines and inputs	59	15.2	15.2	78.1
	All of the above	85	21.9	21.9	100.0
	Total	388	100.0	100.0	

Table 4.19 shows the distribution of respondent's views on areas that needs improvement in the programme as regards to awareness in facilitating their farming needs. The table shows that 151 (38.90%) indicated that the programme needs improvement in creating more awareness in the area of access to grants and loan for farmers; 93 (24.0%) indicated that the programme need improvement on the area of creating more awareness on how to access fertilizer; 59 (15.20%) indicated that the programme needs improvement on creating awareness on modern farm machines and inputs while 85 (21.90%) indicated that the programme needs improvement on creating awareness on all the areas mentioned earlier. This implies that those that need the programme to be improved in the area of creating more awareness on access to grants and loans constitute the majority.

Table 4.20: Areas in which the programme has facilitates the respondents farming knowledge

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fishing and poultry farming	33	8.5	8.5	8.5
	Vaccination and disease control	145	37.4	37.4	45.9
	Irrigation and soil maintenance	58	14.9	14.9	60.8
	Harvest and post-harvest operations	91	23.5	23.5	84.3
	All of the above	61	15.7	15.7	100.0
	Total	388	100.0	100.0	

Table 4.20 shows the distribution of respondent's views on areas in which the programme has facilitates their farming knowledge. The table shows that 33 (8.50%) indicated that their farming knowledge was facilitated in the areas of fish and poultry farming; 145 (37.40%) indicated that the programme has facilitates their knowledge in the area of vaccination and disease control; 58 (14.90%) indicated that the programme has facilitates their knowledge on irrigation farming and soil maintenance 91 (25.50%) indicated that they gain more knowledge on harvest and post-harvest operations while 61 (15.7%) indicates that the programme has facilitates their farming knowledge on all areas of farming mentioned earlier. This implies that respondents who gain more knowledge in the area of vaccination and disease control through the programme constitute the majority

Table 4.21 *Noma Tushen Arziki* radio programme has enhance the farmers knowledge and motivation on farming facilities

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	101	26.0	26.0	26.0
	Agree	213	54.9	54.9	80.9
	Neither agree nor disagree	52	13.4	13.4	94.3
	Disagree	16	4.1	4.1	98.5
	Strongly disagree	6	1.5	1.5	100.0
	Total	388	100.0	100.0	

Table 4.21 shows the distribution of responses on whether *Noma Tushen Arziki* radio programme has enhanced farmers knowledge and motivation on farming facilities. The table shows that 101 (26.0%) strongly agreed that the programme has enhance their farming knowledge and

motivation on farming facilities; 213 (54.90%) agreed; 53 (13.70%) neither agreed nor disagreed, 15 (3.90%) disagreed while 6 (1.50%) strongly disagreed. This implies that most farmers agreed that programme has enhanced their knowledge and motivation on farming facilities.

Table 4.22: *Noma Tushen Arziki* radio programme has improve the farmers knowledge of insecticide application

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	136	35.1	35.1	35.1
	Agree	171	44.1	44.1	79.1
	Disagree	27	7.0	7.0	86.1
	Strongly disagree	54	13.9	13.9	100.0
	Total	388	100.0	100.0	

Table 4.22 shows the distribution of responses on whether *Noma Tushen Arziki* radio programme has improve farmers knowledge of insecticides application. The table shows that 136 (35.10%) strongly agreed that the programme has improve their knowledge of insecticide application; 171 (44.10%) agreed; 54 (13.90%) neither agreed nor disagreed, 18 (4.60%) disagreed while 9 (2.30%) strongly disagreed. This implies that most respondents agreed that the programme has enhanced their knowledge of insecticide application.

Table 4.23: *Noma Tushen Arziki* radio programme has enhanced the farmers knowledge of crop harvesting

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	68	17.5	17.5	17.5
	Agree	283	72.9	72.9	90.5
	Neither agree nor disagree	19	4.9	4.9	95.4
	Disagree	13	3.4	3.4	98.7
	Strongly disagree	5	1.3	1.3	100.0
	Total	388	100.0	100.0	

Table 4.23 shows the distribution of responses on whether *Noma Tushen Arziki* radio programme has enhance farmers knowledge of crop harvesting. The table shows that 68 (17.50%) strongly agreed that the programme has enhanced their knowledge of crop harvesting; 283 (72.90%) agreed; 19 (4.90%) neither agreed nor disagreed, 13 (3.40%) disagreed while 5 (1.30%) strongly disagreed. This implies that most respondents agreed that the programme has enhanced their knowledge of crop harvesting

Table 4.24: *Noma Tushen Arziki* radio programme has enhanced the farmers knowledge of storage

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	114	29.4	29.4	29.4
	Agree	195	50.3	50.3	79.6
	Neither agree nor disagree	49	12.6	12.6	92.3
	Disagree	19	4.9	4.9	97.2
	Strongly disagree	11	2.8	2.8	100.0
	Total	388	100.0	100.0	

Table 4.24 shows the distribution of responses on whether *Noma Tushen Arziki* radio programme has enhanced farmers knowledge of storage of farm products. The table shows that 114 (29.40%) strongly agreed that the programme has enhanced their knowledge of insecticide application; 195 (50.30%) agreed; 49 (12.60%) neither agreed nor disagreed, 19 (4.90%) disagreed while 11 (2.80%) strongly disagreed. This implies that most respondents agreed that the programme has enhanced their knowledge of storage of their farm produce.

Table 4.25: *Noma Tushen Arziki* radio programme has enhanced the farmers knowledge on access to agricultural loans facilities

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stongly Agree	44	11.3	11.3	11.3
	Agree	98	25.3	25.3	36.6
	Neither agree nor disagree	139	35.8	35.8	72.4
	Disagree	69	17.8	17.8	90.2
	Strongly disagree	38	9.8	9.8	100.0
	Total	388	100.0	100.0	

Table 4.25 shows the distribution of responses on whether *Noma Tushen Arziki* radio programme has enhanced farmers knowledge on access to agricultural loan facilities. The table shows that 44 (11.30%) strongly agreed that the programme has enhanced their knowledge on how to access agricultural loan facilities; 98 (25.30%) agreed; 139 (35.80%) neither agreed nor disagreed, 69 (17.80%) disagreed while 38 (9.80%) strongly disagreed. This implies that most respondents neither agreed nor disagree that the programme has enhanced their knowledge of access of agricultural loan facilities.

4.3 Discussion of findings

This section provides a general discussion on the main findings of the study aimed to answer the research questions.

RQ.1 What are the motivational factors for listening to *"Noma Tushen Arziki"* radio programme?

When asked what are their motivational factors for listening to the *Noma Tushen Arziki* radio programme, based on findings from table 9, majority of the respondents indicated that they "strongly agreed" that they listen to the programme because of the agricultural interview conducted in the programme. This was closely followed by those who strongly agreed that the agricultural innovations presented in the programme motivates them to listen to the programme as shown in table 10, because it communicates information and knowledge from agricultural experts and other farmers to them, which in turn help them to improve their skills and adopt new and improved practices. This finding agrees with a study conducted by Emenyeonu (1987) the study revealed that majority of the farmers own radio sets which enables them to listened to interviews and news on different agricultural innovations. Table 5 reveals that majority of the respondents agreed that the programme presenter motivates them to listen to the programme. Finding from table 8 also reveals that majority of the respondents equally agreed that they listen to the programme because of the broadcast period. This agrees with Adam (2008) which revealed that majority of farmers listened to the agricultural broadcasts at least once a week in the evening on public service local radio station in Ghana. The frequency of listening to the radio programmes within a week however varied due to the broadcast period.

Some farmers also agreed that they listened to the radio programs *Noma Tushen Arziki* because of its mode of presentation. This is because the programme is interactive and it gives farmers opportunity to ask questions, make contributions and to hear other farmers' voices where

they share their experiences and practical lessons. Belonging to a social group enhances social capital allowing trust, idea and information exchange (Mignouna, 2011). Farmers within a social group learn from each other the benefits and usage of a new technology. (Uaiene, 2009) suggests that social network effects are important for individual decisions, and that, in the particular context of agricultural innovations, farmers share information and learn from each other. However, the findings from table 7 also reveals that majority of the respondents neither agree nor disagree that musical interlude of the programme and its signature motivates them in listening to the programme.

These findings reveals that, listenership to "*Noma Tushen Arziki"* radio programme by farmers in Barkin Ladi was found to be very high; this is attributed to the agricultural innovations presented in the programme, interviews conducted, programme mode of presentation and the broadcast period of the programme which serves as major motivational factors on why farmers listen to the radio programme *Noma Tushen Arziki*. This means that the programme have high audience level among farmers in Barkin Ladi local government area. These findings agree with previous studies on the effectiveness of radio programmes especially where such programmes are delivered in a manner that creates interest in the target audience. Studies have also shown that people tend to be more aware and give preference to programmes where they find an area or areas of interest (Akanbi, A. 2014).It also agreed with a study by (Oyedele, 2007)) on "technical information needs in improving citrus production". The study reveals that majority of the farmers preferred radio as a major source of information and entertainment. However, he recommends that there should be more radio programmes that will educate rural farmers, since majority of the respondents listen to the radio.

One of the basic assumptions of diffusion of innovation theory is that media as well as interpersonal contacts provide information and influence opinion and judgment. Hence, (Defleur D. 1996), note that the diffusion of innovation theory is a very important theory in studying mass communications issues because each of the major mass media was originally an innovation that came to be adopted and widely used and the media are often largely responsible for bringing new ideas to the attention of people who eventually adopt them.

RQ.2. To what extent do farmers in Barkin Ladi utilize the agricultural messages aired on "*Noma Tushen Arziki*" radio programme?

Findings from table 12 reveals that 61.1% of the respondents listen to the *Noma Tushen Arziki* radio programme. Table 13 also shows that 50.8% of the respondents regularly refer to the messages presented in *Noma Tushen Arziki* radio programme. When asked what kind of agricultural messages they received on the programme, 56.4% of the respondents indicated that they received agricultural innovations on crop farming while 27.3% of the respondents indicated that they received new agricultural innovations on livestock farming. Agricultural information is meant for all types of farmers. However, specific farmers will require specific information relevant to their farming needs. In this research findings reveals that crop and livestock farmer are the major consumers of agricultural information aired on *Noma Tushen Arziki* radio progamme for their sustenance and for national development .Crop farmers usually grow a wide variety of different crops, including wheat, barley,corn, potatoes, lentils, oats, cotton or mustard etc, while livestock farming is about raising animals like goats, pigs, sheep, cattle, camels, poultry, etc. Livestock/crop farming involves cultivating the land as well as engaging in livestock farming. (Rao, 2007). These findings is in line with previous studies on the potentials of agricultural information to farmers as reported by (Vidanapathirana, 2012) according to him, agricultural information within the hands of the farmers means empowerment through control over their resources and decision-making processes. This assertion makes it very clear that when farmers are bestowed with information, they become empowered and are able to make positive changes in their farming activities

Table 15 reveals that majority of the respondents discuss issues raised on the programme with their friends followed by those who discuss the issues raised with their family members. These

clearly shows *Noma Tushen Arziki* radio programme makes farmers to interact with their friends and families on issues that are been presented in the programme. . This also agrees with the findings of (Sokoya et al., 2012), who observed that interpersonal connectivity between farmers and radio personnel will enhance farmers' information literacy, knowledge and awareness of current trend in farming. Data gathered from table 16 shows that 55.9% of the respondents listen to the programme because of the agricultural educative issues presented in the programme, also 59.9% of the respondents preferred the repeat broadcast of the programme.However, results from table 18 shows that majority of the respondents, need the programme to be inproved in the areas of farmers access to grants and loan followed by those who need more improvement in the area of access to fertilizer.

Using the innovation decision process of the diffusion of innovation theory, the findings affirmed that farmers have received agricultural knowledge and innovations from listening to the radio programme *Noma Tushen Arziki* of which a favourable response was made by individual farmers which resulted in the efficient application and ultilization of the agricultural information received especially in the areas of crop and livestock farming.

RQ.3 What is the influence of *"Noma Tushen Arziki"* radio programme on farming practices in Barkin Ladi?

The influence of *Nomo Tushen Arziki* radio programme were measured by using a five-item five-point Likert scale for each of them. Priest (1996) noted the importance of Likert scales in media research, and stated that though they often measure attitudes, they are useful also for measuring variables such as credibility, believability, preferences, needs and satisfaction. Findings from Table 20 reveals that the statement "*Noma Tushen Arziki* radio programme has enhance my knowledge and motivation on farming facilities" has recorded a high response of 54.9% from respondents who agree with the statement while 26% strongly agreed with the statement. When asked whether the programme has improved their knowledge of insecticide application 44.1% agree with the statement while 35.1 strongly agreeing with the statement as shown in table 21.Similarly,data gathered in table,22 reveals that 72.9% of the respondents agree that *Noma Tushen Arziki* radio programme has enhanced their knowledge of harvesting crops and 50.3% of the respondents agreed also that their

knowledge of storage of agricultural product was enhance by the radio programme *Noma Tushen Arziki*. However result from table 24 indicates that majority of the respondents neither agree nor disagree with the statement that Noma Tushen Arziki radio programme has enhanced their knowledge on access to agricultural loan facilities. These findings shows that, majority of the respondents are being influenced by the Noma Tushen Arziki radio programme in their various farming fields while few of them indicated that they are not being influenced. Diffusion of innovation theory predicts that media as well as interpersonal contacts provide information and influence opinion and judgment. The finding of the research indicated that the farmers in the study area attained some knowledge out of the agricultural programmes aired and also the knowledge gained had made impact on the farmer's agricultural practices. This finding is in line with (Okwu, 2007) that the listeners of radio agricultural programmes gained knowledge of various improved practices and the knowledge gained was found very useful to their agricultural endeavors.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Major Findings

The research findings reveals that, the major motivational factors that make farmers to listen to "*Noma Tushen Arziki"* radio programme in Barkin Ladi are the agricultural innovations presented in the programme, interviews conducted, programme mode of presentation and the broadcast period of the programme.These factors motivates majority of the farmers to listen to the radio programme *Noma Tushen Arziki*.

Based on the findings of the study, knowledge of certain agricultural practices such as crop farming, post harvest farming activities, livestock farming and aquatic farming was received by farmers. Crop and livestock farmer are the major consumers of agricultural information aired on *Noma Tushen Arziki* radio progamme for their sustenance and for national development

Thirdly, findings also revealed that majority of the respondents discuss issues raised on the programme with their friends followed by those who discuss the issues raised with their family members. These clearly shows *Noma Tushen Arziki* radio programme makes farmers to interact with their friends and families on issues that are been presented in the programme.

Also Majority of the respondents, need the programme to be inproved in the areas of farmers access to grants and loan followed by those who need more improvement in the area of access to fertilizer. Based on the research findings the programme Noma Tushen Arziki radio programme also has enhance farmers knowledge majorly in the areas of farming facilities, insecticide application and harvesting crops.

Finally, the findings of the research has indicated that farmers in the study area attained some knowledge out of the agricultural programmes aired and also the knowledge gained has influenced and made impact on the farmer's agricultural practices

5.2 Contribution to knowledge

This study, like any academic work at a higher level, has to contribute to the bulk of existing knowledge through both the theoretical and practical aspects. This is because in this study, much has been investigated, reported and documented *on Noma Tushen Arzkiki* radio programme. Also attempts have been made to investigate the role *Noma Tushen Arziki* radio programme has played in facilitating farmer's knowledge and its level of adoption among audiences in Barkin Ladi local government area. In general, the findings of this study from the survey conducted have contributed to knowledge in so many ways.Noma tushen arziki has a higher audience in Barkin Ladi local government area of Plateau state. Base on the research question and statement of the problems, the research analysis has contributed to knowledge by highlighting the various factors that motivates farmers to listen to the programme and the areas the programme influence their farming practices. New ideas, technology and innovation aired on the programme have been adopted in Barkin Ladi by farmers as seen in some selected areas of farming. It has significantly facilitates farmers knowledge in their various agricultural practice

The research has also contributed a lot of knowledge to the producers and sponsors of the programme *Noma tushen Arziki* by making them to understand the actual problem and challenges of the programme by the farmers in the locality thereby recommending various strategies in which the programme can be improved. It has also contributed knowledge to the department at large.

.5.3 Conclusion

Radio is considered as an effective tool to disseminate various forms of information and it is the most powerful mass media for broadcasting information quickly. Among the various means of information access and dissemination, radio is very significant due to its portability.

Information is a vital resource for successful socio-economic activities; all fields of human endeavor needs information as a necessary component for better performance especially where such information is turned to knowledge and positively used. From the data analysis and summary of the major findings, *Noma Tushen Arziki* radio programme on PRTVC was conceived to extend new innovations, techniques and information on agriculture to farmers towards improving their agricultural produce and standard of living. This research thesis observed the utilization of *Noma Tushen Arziki* radio programme by farmers in Barkin ladi Local Government Area in Plateau State.

Noma Tushen Arziki radio programme was found to enhanced farmers knowledge in different areas of farming, financial assistance should be given to farmers to ensure sustainable increase in the income of local farmers who are ready to adopt new technology and innovations aired.

5.4 Recommendations

Based on the major findings of the study, the following recommendations were made:

i. Since the programme have the ability to increase farmers knowledge in their various farming activities. Its producers should be familiar with the latest programme structure and diverse farmer's needs in other to be able to meet their information needs. In other words the program content should represent the actual problems that farmers were dealing with.
ii. Despite the short airing period, the program have much audience, it's therefore recommended that PRTVC should consider increasing the airing period.
iii. The farmers' average level of education was low, some were illiterate, PRTVC should consider the use of local dialects in broadcasting the program since the use of simple

language is crucial to make the content easy to understand and the content will become more relevant to farmers.

iv. Government should partner with both private sector and Non-Governmental Organizations in other to create an enabling environment for rural farmers to access loans, grant, facilities and other means of assistance that will help them apply modern technology and innovations in their farming practice, which in turn will boost food production and alleviate poverty in rural communities.

v. Extension workers should try to meet with the local farmers once a while in other to discuss in a focus group discussion. These will enable the farmers and extension workers to understand the actual problem.

vi. *Noma Tushen Arziki* radio programme should be improved in the mode of presentation by increasing the time of traditional musical interlude and drama, this will improve the farmers attention towards the programme.

vii. More media coverage of the programme should be increased, these can be achieved through the involvement of private and other government radio station.

5.5 Suggestion for further studies

There is a lot of literature relating to the role radio played in promoting agriculture. Therefore, further research should be carried out to find out the extent rural farmers use the new media to get their information on agriculture; these will go a long way in complementing this research. It can be carried out using other methods of data gathering.

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APPENDIX

QUESTIONNAIRE

DEPARTMENT OF MASS COMMUNICATION, AHMADU BELLO UNIVERSITY,

ZARIA NIGERIA

Dear Respondent,

I am a Post Graduate student of the Department of Mass Communication, Ahmadu Bello University, Zaria. I am carrying out a study on ―Farmers utilization of "*Noma Tushen Arziki*"by PRTVC in Barkin ladi Local Government Area of Plateau State. Note: information provided will be used only for academic research and nothing else.

Tick the appropriate option

SECTION A: BIOGRAPHIC DATA

1. Sex:

(a) Male [ ]

(b) Female [ ]

2. Age group:

(a) 18-24 [ ]

(b) 25-30 [ ]

(c) 31-36 [ ]

(d) 37 and above [ ]

3. Qualification:

(a) Primary school [ ]

(b) Secondary [ ]

(c) Diploma and Above

(d) None [ ]

4. Farming Occupation:

(a) Livestock Farming [ ]

(b) Irrigation Farming [ ]

(c) Crop Farming [ ]

(d) aquatic Farming [ ]

SECTION B: ASSESSMENT OF "*NOMA TUSHEN ARZIKI*" RADIO PROGRAMME

This section is intended to measure respondents' motivation for listening to Noma Tushen Arziki agricultural programme, how it influence them and the extent of adoption of knowledge they acquired from the programme.

Note: please, tick one of the options below

Key:

SA Strongly Agree

A Agree

N Neither agree nor disagree

D Disagree

SD Strongly Disagree

S/N		SA	A	N	D	SD
5.	I listen to "*Noma tushen ariziki*" radio programme because of the presenter					
6.	I listen to "*Noma tushen ariziki*" radio programme because of the mode of presentation					
7.	I listen to "*Noma tushen ariziki*" radio programme because of the musical interlude					
8.	I listen to "*Noma tushen ariziki*" radio programme because of the broadcast period					
9.	I listen to "*Noma tushen ariziki*" radio programme because of the interviews conducted in the programme					
10	I listen to "*Noma tushen ariziki*" radio programme because of the agricultural innovation presented					
11.	I listen to "*Noma tushen ariziki*" radio programme because of the signature tune					

12. How frequent do you listen to "*Noma tushen ariziki*" programme

a. Regularly ☐

b. Sometimes ☐

c. Very rare ☐

d. Once in a month ☐

13. How often do you refer to the messages presented in *" Noma Tushen Arziki*" radio programme in farming practices

a. regularly ☐

b. sometimes ☐

c. rarely ☐

14. What kind of agricultural innovation do you received on "*Noma Tushen Arziki"* radio programme

a. crop farming ☐

b. Post-harvest farming activities ☐

c. livestock farming ☐

d. aquatic farming ☐

15. How do you discuss the issues raised in "*Noma Tushen Arziki" radio* programme?

a. With friends ☐

b. with family member ☐

c. with members of farmers cooperative society ☐

d. all of the above ☐

6. what is your major reason for listening to "*Noma Tushen Arziki"* radio programme

a. Enlightenment issues on agriculture ☐

b. Educative issues on agriculture ☐

c. Mobilization issues on agriculture ☐

d. Entertainment issues on agriculture ☐

e. All of the above ☐

17. What time of the programme broadcast do you listen

a. First broadcast only ☐

b. Repeat broadcast only ☐

c. All of the above ☐

18. What areas do you think the programme needs improvement as regards to awareness in facilitating your farming needs

a. Grants and loans ☐

b. access to Fertilizer ☐

c. New Machines and Inputs ☐

d. All of the above ☐

19. Tick the area in which the programme has facilitates your farming knowledge

a. Fishing and Poultry Farming ☐

b. Vaccination and Diseases Control ☐

c. Irrigation and Soil Maintenance ☐

d. Harvest and Post-harvest Operations ☐

e. All of the Above ☐

PLEASE TICK ONE OF THE OPTIONS BELOW

Key:

SA **Strongly Agree**

A **Agree**

N **Neither agree nor disagree**

D **Disagree**

SD **Strongly Disagree**

S/N		SA	A	N	D	SD
20.	"*Noma Tushen Arziki" radio* programme has enhance my knowledge and motivation on farming facilities					
21.	"*Noma Tushen Arziki" radio* programme has improve my knowledge of insecticide application					
22.	"*Noma Tushen Arziki" radio* programme has enhance my knowledge of harvesting crops					
23.	"*Noma Tushen Arziki" radio* programme has enhance my knowledge of storage					
24.	"*Noma Tushen Arziki" radio* programme has enhance my knowledge on access to agricultural loans facilities					