

UNIVERSITY OF NAIROBI

DEPARTMENT OF SOCIOLOGY AND SOCIAL WORK

**THE ROLE OF RADIO BROADCASTING IN ENHANCING FARM PRODUCTION IN
RURAL KENYA: A CASE OF RADIO NAM LOLWE IN KAKELO LOCATION, HOMA BAY
COUNTY**

*A Research Project Submitted in Partial Fulfillment of the Requirement for the Award of
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DECLARATION

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DEDICATION

To my husband Mr. Eric Owuor, thank you for believing in me and pulling me up when I was down.

To my kids, Eldon and Gianna whom at many times I was unable to give them my attention, audience or company when they needed it most, thank you for your patience during this study.

To my parents, my late dad Mr. Mudkayo and Mama Lucia, thank you for instilling the fighting spirit in me.

To my siblings, this is yours too.

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ABBREVIATIONS AND ACRONYMS

FM – Frequency Module

NGO – Non-Governmental Organization

UNDP – United Nations Development Program

FAO – Food AND Agriculture Organization

USAID – United State Agency for International Development

CCK – Communication Commission of Kenya

MCK – Media Council of Kenya

BBC – British Broadcasting Corporation

SMS – Short Message service

SACCO - Savings and Credit Cooperative Organization

IFAD – International Fund for Agricultural Development

GDP – Gross Domestic Product

ERS – Economic Recovery Strategy

SRA – Strategy for Revitalizing Agriculture

ASDS – Agricultural Sector Development Strategy

NARC – National Rainbow Coalition

UNESCO - United Nations Educational Scientific and Cultural Organization

ECA – Economic Commission for Africa

KARF – Kenya Audience Research Foundation

ABSTRACT

Radio has formed a key component in improving farm production by creating awareness among farmers about agricultural information and the availability of markets for their produce. This is expected to lead to food security, improved livelihoods, and national economies (Gomez, 1970). However, local farmers' access to agricultural information has for long time remained very poor at various phases of the rural development as a result of the language radio uses to reach them (Nakabugu, 1999). This has prevented local farmers from participating in issues that concern them. The use of vernacular radio stations to reach local farmers with the information they need has therefore, provided the opportunity for improving farm production.

The study sought to inquire if Radio Nam Lolwe has had any significant role in enhancing farm production of its listeners in Kakelo Location through its daily agricultural programs. The study was guided by the conviction that vernacular radio broadcasting has the potential of enhancing farm production and that audience adoption and participation is a key to this. The overarching main objective was to out what ways vernacular broadcasting contributes in the improvement of farm productivity of its audience. Specific objectives were tailored to identify topics on farm program presented by the radio station; the level of access of households to the radio farm program; farmers' perception of the content of the agricultural program; and the level of adoption of the agricultural information received.

This study attempted a descriptive research design. Farmers from Kakelo Location were sampled using Multistage sampling method based on better farming and radio listenership habits. This was to enable the researcher assess if by listening agricultural program aired on radio, farmers could improve their farm production. Quantitative data was collected from respondents by administering questionnaires using structured questions. The total sample size of the household heads was 60. Qualitative data was collected through unstructured key informant interviews using an interview guide to keep the interview in line with the research objectives. A purposive sampling which is non-probability technique was used to sample 6 key informants for this study. Non-participant observation was also used by the researcher to collect observational data. This was done using an observation check list. The raw data was processed using Statistical Package for Social Sciences (SPSS). Descriptive statistics were used to present data.

Findings from the study revealed that Radio Nam Lolwe has six segments of topics relevant to the needs of its audiences. Radio Nam Lolwe represented an ideal case study for this matter in respect to its agribusiness interactive program that promotes farming as a commercial enterprise and increases farmers' access to information relating to markets, products, inputs and more efficient production methods in the agricultural sector.

The study also revealed that poor reception of other radio stations was one of the reasons why majority of farmers preferred using only radio Nam Lolwe to access agricultural information. The study also found that other sources of farm information before the introduction of vernacular broadcasting included agricultural officers, NGO, parents and neighbors. However, none of the respondents were found to be still using agricultural officers and parents to access information because of their inaccessibility and old methods of farming respectively, where as information from the local NGO and neighbors were found to be still relevant to farmers' needs.

Farmers' reaction towards radio farm topics was also found to be generally positive. However, only less than ten percent (8%) of farmers felt dissatisfied with the information on types of seeds to be planted. This could be explained by the fact that many soils had not been tested and therefore farmers did not know the type of seeds that could match their soils. Also many a times farmers were duped by being sold seeds of low standards that later lead to low yields. Acceptance of change and willingness to take risk by trying out new ideas on farming methods was shown to have a direct relationship with the respondent's level of income and education, as well as quality of farm content aired on radio.

The study concluded that while vernacular radio stations are the ideal platforms on which local farmers can access information that in turn shape their farm productivity agenda, it ends with some recommendations on how best the radio stations can bring out the extension service by organizing agricultural field days accompanied by experts in various fields of profession to demonstrate practically complex issues to farmers; linking rural farmers to market, manufactures of farm inputs, and other agricultural information for easier access; formation of farmer organization groups such as farm groups that would play a significant role in farm information adoption; and radio stations to design their programs to match the agricultural microclimates and an extension program of feedback to be incorporated in the production process.

CHAPTER ONE: INTRODUCTION

1.1 Background Information

Development, be it measured in terms of increases in farmers' productivity, improved education of children, decreased birthrates, the use of more nutritious foods, and so on, can be said to be a result of effective communication (Roling & Ascroft, 1971: Page 1). It is then through communication that new productivity-generating ideas spread, that people get mobilized and organized to achieve a common purpose, that a nation becomes welded together and unified.

Communication for development for a long time has been seen as not producing the development that had been promised. This was because too often, information was being thrown at problems that were defined by lack of resources, and not lack of knowledge (Hornick, 1988). One of the major causes of relative failure or serious lag in development projects as noted by Childers & Vajrathon (1969) may also be traced to deficient means of intensive information – communication to the communities and other definable groups whose decisions, attitudinal changes, and innovation-adoptions are crucial.

Abidi (1991) in his introduction to communication, Information and Development observes that in Africa, we are engaged in a serious struggle for development. We have enormous amount of resources yet our efforts have not been able to reduce the gap between developed and the developing economies. Our projects have not succeeded in reaching the optimum level of achievement. We therefore have to seriously search for the reasons as to why we have not been able to utilize our resources appropriately and also our speed for development has not been as first as we wanted to see it.

Agricultural development therefore has been much too slow in most of the developing countries Kenya included, for food production to keep pace with population growth. One reason for such lag has been the poor performance of extension agencies as well as lack of quality communication strategies in rural development (Ross 1969). In this light, Crouch & Chamala (1981: Page 15) expressed that it is not lack of technologies and scientific discourses however, that is needed for economic growth and rural change, but that of converting them into production accomplishments, and then using them as an instrument of economic growth and social change.

The absence of functional agricultural information delivery system has therefore been identified as a major constraint to agricultural development in least developed and developing countries grapple with insufficient personnel and funding of agricultural extension services (Aina, 1989). As explained by Crouch & Chamala (1981: Page 15), such a conversion of new technologies and scientific discourses would depend to a great extent on the speed with which they are transferred from its source to the ultimate unit of its utilization so that the peasant user clearly understands, accepts and supplies it in their day-to-day practices. This, in turn, demands a suitable and effective communication strategy that will involve the masses to participate in the development issues affecting their lives which later contributes to national development.

Agricultural information is a critical ingredient to improving small-scale agricultural production especially among peasant farmers. This will consequently lead to improved rural livelihoods, food security and national economies. Improvement of agricultural productivity will be realized when farmers are linked to Agricultural information about farm inputs, markets to their produce etc (Rogaly, et al, 1999). In many rural regions, however, the farmers and small entrepreneurs are consistently incapacitated by lack of price information on prevailing market prices before they travel or if they don't travel to the market. This is due to poor communication facilities and more often rely on middlemen who take advantage to exploit them.

Kenya's approach to agricultural and rural development is enshrined in its modernization of agriculture plan, which calls for a shift from traditional agriculture to a technologically based scope to ensure food security (Nakabugu, 1999). The challenge experienced in achieving this goal centrally lies in its communication strategy as a denominator to cause change. This calls for communication approaches that target and involve the rural communities since they depend on Agriculture for their livelihood (Abidi 1991; Crouch & Chamala 1981; Rogers 1969).

A large number of innovations in farming as well as other areas are being released and commercialized to the rural people particularly the farmers, by different communicators and through a variety of channels. But the effects of such communications have not been quite as pronounced as one might expect (Crouch & Chamala, 1981: Page 15). This is evidenced by the rural people's generally inadequate knowledge, understanding, skills and sometimes negative attitude relating to change. Many subsistence farmers therefore, are not reached with information believed to be of value to them (Hornik 1988). This makes them either to delay or take no

action at all with regard to the suggested innovation.

It is therefore evident that development implies change, and the first change that takes place is the attitude of the people who will be directly affected by the development in this case, the subsistence farmers and the rural communities. In order to achieve this goal, there must be a fundamental change in the way farmers approach agriculture and the rate at which they adapt new technologies in health and education, husbandry and farming practices (Rogers 1969).

In order to achieve this change, rural communities need to be informed on the importance of adapting these new practices. Farmers need to be informed and educated about improved agricultural practices in order to enable them increase agricultural productivity and by this, increase both household and national incomes (Van den Ban & Hawkins, 1992).

Attempts by extension service although through demonstration farms and working with communities (Hornik 1988), have not been sufficient to bring about change in attitudes among the Kenyan rural farmers. This is because of the approach as well as the language used in reaching the rural farmers. Many experts therefore have over the years identified radio as the only medium of mass communication popular among the low-income population (Jamison & McAnany 1978). This may be attributed to the various advantages it bears including; its population relative affordable, coverage of wide geographical areas, language of broadcast, etc. (Kuponiyi, 2000). Hornik (1988); Jamison & McAnany (1978); indicate that radio has become a channel that has been successfully used to disseminate agricultural information especially to rural population and also to complement the efforts of the extension workers, thus, makes it the best media for this purpose.

The increasing number of radio sets and radio stations in developing countries indicates that radio broadcasting can play a strong role in rural development. The effectiveness of this medium can be further enhanced if radio stations are localized and geared to programming that meets the specific interests and needs of their “special audiences” (Gomez 1970: Page 91).

However, radio cannot be singly used to reach rural farmers. As (Jamison & McAnany 1978; Rogers 1983; Hornik 1988) put it, projects that depend on a single medium to reach their audiences may find that some parts of the audience is inaccessible, does not understand, nor use the medium as a stimulus for practice change. Therefore, there is need to use multiple channels

since they have a higher probability of success, both because different channels serve different needs (Roling & Ascroft 1971; Rogers & Shoemaker 1971). In explaining Diffusion model, (Rogers & Shoemaker 1971: Page 266) and (Hornik 1988: Page 18), noted that in the knowledge stage, as individuals become aware of an innovation, they rely on mass media such as radio; and as they move toward a decision, they tend to rely on personal sources such as extension services, farm group discussions etc. (Roling & Ascroft 1971: Page 16).

Agricultural information dissemination therefore is an important aspect in quest to improve agricultural productivity both in Africa and specifically Kenya, and several channels have been used for this purpose. They include; Extension Officers, Pamphlets, field days, Newspapers, TV, Radio and many more (Van den Ban & Hawkins, 1992; Olowu & Oyedokun, 2000). Vernacular radio broadcasting becomes ideally best placed to provide this kind of information to its listeners, especially subsistence farmers because majority of them live in rural areas, practice agriculture as a source of livelihood, and might not have an in-depth understanding of English and/or Swahili that have been recognized and used in the public domain.

1.2 Problem Statement

Millions of livelihoods in most of the Kenyan rural areas depend heavily on agriculture which is in small scale (Dey et al., 2008). Kakelo Location is primarily occupied by small-scale farmers whose main enterprise is majorly subsistence crops which serve as the main household food supply with the surplus of sweet potatoes being sold through complex and unfair marketing chains for income generation (Woomer et al., 1998). Consequently, farmers had been paying exorbitant prices for their farm produce since they repeatedly depended on middlemen who often take advantage of the situation to exploit them because of lack of market information. As a result, local farmers have suffered the effects of poor communication channels that have been used to reach them with the agricultural information on farm inputs such as fertilizers, certified seeds, weather conditions, market and other important information that are essential in farm productivity. This has led to decreased farm productivity and expansion of investment in agriculture in rural areas (Munyua, 2007). This situation has been so because such information has been disseminated by those FM radios using the national languages that are perceived by rural population as secondary and remote from their immediate needs and daily living, leading to a large section of the citizenry missing much of what is of their benefit (Orao 2009: Page 78).

Insufficient extension services to reach the vast rural population and the current Government policy of demand-driven approach to reach farmers have impeded the transfer of technology at the farm level. A survey conducted by the National Sample Survey Organization in June, 2005, revealed that only 40% of farming households have access to information about modern farming technologies. Similarly, the cost of delivering information face-to-face in the public sector is very high. This crumbling extension network can be strengthened by the use of vernacular radio broadcasting in disseminating agricultural information to local farmers using the language they understand best.

The role of agricultural information in farm productivity has been a major concern to rural development stakeholders. The Government through Agricultural sector has developed various Agricultural strategies with an aim of identifying agriculture as a means of livelihood and the key to food security and poverty reduction for most rural population i.e. ERS, SRA, ASDS and the National Policy Vision 2030 (Republic of Kenya, 2010). Despite the concerted efforts to implement these Agricultural strategies, productivity still continues to affect this sector. This is because the rural population contributing majorly to agricultural sector has become inaccessible with the relevant information they need, a concept that has not been factored in this National policies. Therefore, there is need to link rural farmers with the relevant agricultural information that would help them get a competitive range of market prices for their produce, and other related information about farm inputs and new farming methods which is possible through the use of vernacular radio broadcasting.

1.3 Research Questions

- i. What are the topics on agricultural program presented by Radio Nam Lolwe?
- ii. What is the level of access of households to radio farm programs?
- iii. What are the farmers' perceptions on the radio farm content aired by Nam Lolwe FM?
- iv. What is the level of adoption of the farm information received from the FM?

1.4 Objectives of the Study

The main objective of the study was to assess the contributions of the vernacular broadcasting towards enhancing farm production in Kenyan rural areas. The specific objectives of the study included:

- i. To identify the topics on agricultural radio program presented by Radio Nam Lolwe
- ii. To find out the level of access of households to the agricultural radio program
- iii. To determine farmers' perception of the content of the farm program aired by the FM
- iv. To examine the level of adoption of the farm information received

1.5 Significance of the Study

The research is a new area of study. Radio broadcasting in Kenya was started in 1922 while the first FM radio station (Capital FM) was only launched a decade ago in 1996 with the first vernacular radio station (Kameme FM) being launched four years later in 2000. Vernacular broadcasting has made gigantic contributions in reaching rural communities using local languages, an aspect that has been not considered by those FM radio stations with national reach. The capacity and potential of vernacular radio broadcasting to improve the quality of life of the rural farmers by linking them to information, is no longer in doubt. Through vernacular radio stations, farmers are able to acquire agricultural information on the prices of inputs and output, weather, commodity demand, agronomic practices, among other important information. For radio information to be helpful and to improve the life of the farmer, its content and the language of broadcasting must be relevant to the local situation.

Kenya continues to wrestle with different challenges of an economic, political, and social cultural nature. Economic challenges include among others, low production output especially in the agricultural sector, the backbone of the Kenyan economy. Economic production in rural areas such as those focusing on agriculture can be improved with reliable information among rural communities. This is because according to IFAD (2011), rural areas are the source of food for the nation with small-scale producers contributing to agricultural production. Majority of this population however, perceive those radio stations with national reach as being secondary and remote from their immediate needs and daily living, blocking a large section of the citizenry from what they require most. There is need therefore to keep rural communities informed of what is happening in and around them in order to adapt to varying situations affecting their farm productivity. Vernacular radio stations like Nam Lolwe FM is well positioned to address this issue, as it would significantly contribute to the use of agricultural knowledge and technologies to improve agricultural productivity among its listeners.

Further, one notes that vernacular FM stations continue to pose considerable competition to FM stations using national languages in attracting the elusive advertising shilling. An analysis of the strengths of these stations is issues that are of interest to not only advertisers and media managers but also policy makers and regulators in the media industry. The finished product of this study will therefore provide an effective language management that will aim at harnessing and developing vernacular broadcasting to empower rural communities to take up responsibility for their own development - an important point that Kenya's policy makers seem not to have grasped.

1.6 Scope of the Study and Limitation

The study investigated the role of Nam Lolwe FM, a vernacular radio station in improving farm production among farmers in a rural area. The study concentrated only on farmers from Kakelo Location who listened to Radio and were 22 years of age and above. This was seen as an ideal age for a person who could make decisions on land use and practice i.e. married persons. Key Informants were limited to only those FM staffs involved in the agricultural radio program, and the agricultural officers specialized in crops and livestock.

1.7 Definition of Key Concepts

Vernacular Broadcasting – This is used in this study to refer to the use of radio as a medium to exchange views from various sources by allowing members of a particular community to gain access to information that concerns them using the vernacular language of the locals as the primary language of transmission.

Farm Production – This means increased agricultural development per person and per unit area, as well as increased output of the farm practice.

Rural Communities - This refers to the people and communities in non-urban areas to places where by virtue of lifestyles, residential location, or occupation, people think of themselves as part of the countryside.

Medium – This refers to a device which is interposed between source and receiver so as to allow them to communicate when they are not in each other's presence, be it in terms of space or time.

Level of Adoption – This is used to refer to the rate at which farmers took decisions to make use of new agricultural idea as the best course of action.

A household – This is used to refer to persons or a group of persons, generally bound by ties of kinship who live together under a single roof or within a single compound, are answerable to the same head and share common source of food.

Agricultural Program – This is used in this study as the program on farm ideas aired on radio

Level of access – This is used in this study as the rate at which farmers reach the radio program on agricultural issues

Farmers' perception – This refers to farmers' opinions on the program on farm issues as aired by the radio

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.0 Introduction

This chapter presents a review of specific and general literature related to the key themes in the study topic, objectives and research questions. The key themes include Rural Development, Farm Production and Vernacular broadcasting. Both published and unpublished works including books, articles, journals, theses, newspaper articles, policy statements, reports, conference speeches and presentations among other works on the role of vernacular broadcasting in farm production. Theoretical frameworks, conceptual frameworks have also been discussed in this study.

2.1 Concept of Farm Production

Agriculture remains the primary source of employment for the majority of the world's population. Some 61 per cent of the population of the developing world is employed in Agriculture and 18 percent of its GDP is derived from the land (World Bank 1979). The growth in the productive capacity of the Agricultural sector is crucial to the survival and development of most less-developed countries, like Kenya (Hornik 1988: Page 29). Schultz (1964) and Hayami & Ruttan (1971) indicated that neither land nor labor increases are likely to boost agricultural production, but technological improvement such as material inputs, farm techniques, research are the promising path towards agricultural growth and accelerating the information flows, making the investment in information produce individual or social returns greater than their costs (Hornik 1988: Page 30).

Despite the central role that Agriculture plays in Kenyan economy, the sector continues to face major challenges. Productivity levels for many crops are below potential and for some agricultural produce; yield and value over a five-year period have either remained constant or are on the decline, with maize and rice having a fifty per cent below benchmark (Republic of Kenya 2012: Page 45).

Writing about rural development in Kenya, Makokha (1985) observes that during the colonial days in Kenya, much of the concern with development, when it was not focused on

industrialization, concerned quite narrowly with agriculture. This led in part to the research for improved seed varieties and the technological breakthroughs which triggered the Green Revolution on the white highlands where by much of the income improvement was generated by white farmers while the native small farmer was only further impoverished.

District Focus for Rural Development, a version of an elaborated Rural Development was later formed out of the realization that a direct focus on the social problems of Rural Development alone turned out to become part of the problem, rather than part of the solution (Makokha 1985). This is because the concept emphasized on the lack of resources rather than lack of knowledge by rural communities, leading to limited access to agricultural information, technology and resources by the subsistence farmer. Farm production therefore becomes impossible without a greater contribution from the vast working population in the rural areas as they are the key actors in rural development (International Labor Organization 1972: Page 15).

Focusing on the mission of the Agricultural sector as ‘innovative, commercially oriented and being modern, the sector has become the mainstay of the Kenyan economy directly contributing 26 per cent of the GDP annually, and another 25 per cent indirectly with more than 70 per cent of informal employment in the rural areas (Republic of Kenya, 2010: Page 1).

Farming in Rural Kenya has become one of the most profitable businesses that rural communities can undertake and therefore the means of their livelihood (2011). It includes food crops, horticulture, livestock and fisheries (Republic of Kenya, 2012: Page 47). Sustained agricultural growth is critical in uplifting the living standards of rural people and generating rapid economic growth. Despite the importance of the agricultural sector, farming in rural areas is constrained by high cost of inputs (price of fertilizers and seeds), limited extension services, limited application of agricultural technology and innovation (Republic of Kenya, 2010: Page 7).

2.2 Government Strategies and Policies Improving Agricultural Sector

To address these challenges, the Kenyan Government under the Agricultural sector has created policies and strategies i.e. the Economic Recovery Strategy (ERS), the Strategy for Revitalizing Agriculture (SRA) and the Agricultural Sector Development Strategy (ASDS) to improve the agricultural sector.

2.2.1 Economic Recovery Strategy for Wealth and Employment Creation (ERS)

In 2003, the NARC Government developed and launched ERS as the blueprint for setting the country back on the growth path. The strategy was a shift from previous planning documents that sought to reduce poverty by creating wealth and employment. Agriculture's fast growth was therefore given high prominence and priority in this strategy towards achieving economic growth (Republic of Kenya, 2010: Page 3).

2.2.2 Strategy for Revitalizing Agriculture (SRA)

The Government developed SRA in 2004 as a response to the ERS. The strategy set out the Government's vision as: to transform Kenya's agriculture into a profitable, commercially-oriented and internationally and regionally competitive economic activity that provides high-quality, gainful employment to Kenyans.

This was to be achieved within the framework of improved agricultural productivity and farm incomes. Agricultural sector was therefore considered in this strategy to be top priority in reducing poverty by over 10%; and increase farm productivity by an average of 6% per annum from 2003 to 2007 as it is the most important economic activity the poor in the rural areas rely on for a livelihood (Republic of Kenya, 2010: Pages 3-4).

2.2.3 Vision 2030

ERS was a 5-year plan that was to expire in the financial year 2007/08. The Government developed a new strategy to take over the ERS; the Kenya Vision 2030 anchoring on Economic, Social and Political pillars. The Vision identifies agriculture as one of the key sectors to deliver the 10 per cent annual economic growth rate envisaged under the economic pillar (Republic of Kenya, 2010: Page 6). To achieve this growth, there was need to transform small holder agriculture from subsistence to an innovative, commercially oriented and modern agricultural sector through increased farm productivity (Republic of Kenya, 2012).

2.2.4 Agricultural Sector Development Strategy (ASDS)

The need to revise SRA to capture new developments articulated in the Kenya Vision 2030 led to the development of a new strategy that would strategically position agriculture as a key driver for delivering the 10 per cent annual economic growth rate envisaged under the economic pillar of Vision 2030 (Republic of Kenya, 2010: Page 8). This strategy is perceived as an ASDS which provides a guide for the public and private sectors' effort in overcoming development challenges facing the agricultural sector.

The Agricultural Sector Development Strategy (2010-2020) concludes that these strategies targeted to reduce the number of people who are food-cum-poverty stricken from 48.4 per cent to 23.5 per cent as well as reducing the proportion of the population below the basic poverty line from 56 per cent to 26 per cent. Despite the promises made on these national documents, productivity levels for many crops however, have been below potential and some agricultural produce yield and value have either remained constant or have been on the decline, making farm productivity therefore to be identified as one among the major challenges that continue to face the Agricultural sector (Republic of Kenya, 2010: Page 7).

Since small-scale producers in rural areas play a big role in much of the production (Muia 2011), the strategic thrust of increasing the productivity should therefore include rural development strategy among others. This is as a concept described by (Lele 1975; Makokha 1985) as one which involves improving living standards of the mass of the low-income population that resides in rural areas and making the process of their development self sustaining, as well as that which places the small farmer or rural peasant at the centre of attention. This concept however, was not captured in these Government Strategies and National Policies in increasing the productivity of peasant farmers. This calls for the need to surface the peasant farmers with quality and relevant information they require in their daily undertakings.

In connection to this, Lele (1975) notes further that by improving the living standards of the subsistence population, it involves mobilization and allocation of resources so as to reach desirable balance overtime between the welfare and productive services available to the subsistence rural sector. Makokha (1985) also explains that the most direct way to bring about change is to improve the relative power position of the small farmer, because, if and when the rural person has the required information, then delivery of services to him will improve.

These strategies can only succeed therefore with the total commitment and determination of all stakeholders involved in enhancing Agricultural sector, especially the rural mass involved in the production. There is need as explained by Hornik (1988) to harness the will and the determination of farmers, processors, the public and private sectors, and non-State actors to realize the agricultural potential through improved agricultural information flow to and from the subsistence farmer in terms of education, extension, market information and trainings.

Lele (1975) concluded by explaining that making the process self-sustaining, requires development of the appropriate skills and implementing capacity and the presence of the institution at the local, regional and national levels to ensure the effective use of existing resources and self-sustenance. This means involving as distinct from simply reaching the subsistence populations through development programs and effectively disseminating the right information to the right people, a concept emphasized by Abidi (1991: Page 82).

2.3 Agricultural Information and the need for Communication

In Rural development context, information relates to products, skills and techniques, while Communication is the interactive process that goes beyond the transmission of information skills and ideas from a source with a view of modifying the behavior of receivers. Information is therefore of only limited value if it is not communicated (ACP Report 1995). An information policy that favors rural development then must serve all actors whose activities have an impact on rural development, from decision-makers to producers (peasant farmers). The challenge is how to reach these producers with the kind of information they require using the right channel of communication.

According to Rogers & Shoemaker (1971: Page 19), an idea, practice, or object perceived as new by an individual is referred to as an innovation. In respect to this study, agricultural information that a peasant farmer requires to improve his farm productivity becomes the innovation. In connection to this therefore, the role of communication in rural development as explained by Jamias (1975: Page 60) is to ensure that an innovation is made known and accepted before it can come into use, and this is possible through various communication channels. Agricultural communication therefore is purposive; it is not concerned merely with the transmission of messages from sources to receivers but with eliciting specific behavioral responses from the target audience. This refers to changes in what they know, want, feel, or do.

Writing about the connection among Communication, Information and development, Abidi (1991: Page 1) observes the important trinity these make, hence are well twined and interdependent as none of them has a role in separation. Development is not feasible without information and information cannot play its role until it is communicated. A report by ECONNEWS Africa on the way forward for community radios in Kenya (2008: Page 15) observed

that a local community does not develop itself. The enthusiasm to break out of stagnation, to sacrifice and go an extra mile, in collaborating with others, must be excited locally. Vernacular broadcasting therefore offers an excellent platform for exciting and fanning such enthusiasm. Through such a medium, the locals can speak to each other, share ideas which are later refined and transformed for the prosperity of their community (Ronoh 2013: Page 25).

African countries such as Kenya whose economies depend entirely on agriculture however, have failed to accept information and communication as a priority investment, in spite of the fact that communication worldwide is in heavy demand for the development of the economy (Abidi 1991: Page 17). Information and Communication therefore, becomes the key to and engine of growth in farm production and transformation in agricultural sector.

UNDP Human Development report (2013) indicates that the circumstances which have led Africa to lag behind in economy are multifaceted. However one reason, to my conviction, has been the weakness of information and communication sector in Africa countries which have sustained greatest losses in international trade due to lack of information and efficient communication. According to the report in question, unless people can participate meaningful in the events and processes that shape their lives, national human development paths will be neither desirable nor sustainable.

The report explains that Human Development puts people's empowerment at the centre of development by enabling people to use their capabilities and resources to the fullest. Therefore, unless people become protagonists of their own development, no amount of investment or provision of technology will improve standards of living in a sustainable way. The problem however, is that the rural people who need to become active actors in their development to enable them improve their livelihood are often beyond easy reach (Orao 2009: Page 79). This is because the languages that have been used in development sphere have blocked the rural populace from participating in issues affecting their daily lives.

The agricultural sector, in general and farmers in particular, are highly vulnerable to risks due to increased variations in climatic conditions and to market uncertainties. Farmer's exposure to risk and uncertainty is often exacerbated by lack of information about weather, inputs, farm management practices or market prices, and this lack of information has an adverse impact

on crop production and income. Severity of these risks depends on individual farmer's knowledge and ability to cope. The evidence suggests that a farmer who receives quality, up to date information, and who has the ability to use that information, is able to reduce the magnitude of these risks (Mittal and Tripathi, 2009: Page 29).

Access to agricultural information by farmers is a critical component in enabling them increase productivity. Farmers, then, require knowledge about new inputs, new techniques of production, and how to economize in production and marketing (Wharton 1965). It is therefore imperative that tools available for information dissemination be used in a manner that is beneficial to all parties (FAO 2001; Chapman et al 2003).

It is expected that radio can play a role in bridging the information gap, and in reducing the information asymmetry that exists between farmers and between regions (Okello, et al., 2011). There is a need for fundamental information about expected weather conditions, and about general know-how: which crops to plant, which seed varieties to use, what the best cultivation practices and farm management practices are for that area, and the best suitable technology available locally (Munyua 2007: Page 45). Improved returns from agricultural production through enhanced access to markets can be a crucial step in alleviating poverty and overall livelihood improvement (Okello et al., 2011).

2.4 Channels of Communicating Agricultural Information

These are the means by which a message gets from a source to a receiver. According to Roling & Ascroft (1971); Rogers & Shoemaker (1971); Lerner & Schramm (1967); and Rogers (1969), these channels play different roles in creating knowledge or in persuading individuals to change their attitudes toward innovations. Communication channels may have an influence on the innovation's level of adoption. They are also different for earlier adopters of new ideas than for later adopters. They can either be interpersonal or mass media in nature.

- i. **Mass media channel** – are all those means of transmitting messages that involve a mass medium, such as radio, television, film, newspapers, magazines etc, which enable a source of one or few individuals to reach an audience of many. Rogers & Shoemaker (1971: Page 266) noted that these channels can reach a large audience rapidly, create knowledge and spread information, as well as lead to changes in weakly held attitudes.

- ii. **Interpersonal channel** – are those that involve a face-to-face exchange between two or more individuals. They have greater effectiveness in the face of resistance or apathy on the part of the receiver. Research has found that these channels allow a two-way exchange of ideas where the receiver may secure clarification or additional information about the innovation from the source of the individual, and also they can persuade receiving individuals to form or change strongly held attitudes.

Jamison and McAnany (1978); and Rogers (1983) argued that projects which depend on a single medium to reach their audiences may find that some part of the audience is inaccessible or does not entirely understand, or does not use the medium as a stimulus for practice of change; while those that use multiple channels have a higher chance probability of success, because different channels serve different needs.

Schramm (1964, Page 123) points out that certain tasks can only be done by specific channels. For instance, personal contact can be used by the agricultural extension agencies in improving the productivity of farms and the advancement of farmers by influencing them to adopt innovation (Jamias 1975); whereas mass media such as radio according to Schramm (1964) can widen horizons, focus attention, raise aspirations, and create a climate for development. However, interpersonal channels alone are inadequate to reach the vast rural populations, while radio as a mass medium can only create awareness, interest and favourable attitudes in the individual, but is less effective in providing specific behavioral skills (Gomez 1970: Page 92).

Therefore, neither interpersonal communication nor mass media alone can meet enormous demands for improving agricultural development particularly in farm production. For this reason therefore, communication channels can be combined in media forums to yield maximum results. Hornik (1988) in this connection noted a serious gap that still exists between innovation-awareness and innovation–adoption, hence the need to bridge the gap.

Rogers (1962) explained this by indicating that a combination of mass media and interpersonal channels is the most effective way of reaching people with new ideas and persuading them to utilize these innovations through the use of Media forums; which are the organized small groups of individuals who meet regularly to receive a mass media program and discuss its contents. It is for this reason that Nam Lolwe FM enlists the full corporation of government extension

agencies, other agricultural institutions and use of medium forums in broadcasting its agricultural content program (Nam Lolwe 2013).

Media forums have been used in India, Nigeria, Colombia, Brazil, China, and other countries. These forums have greater effect because they exert social pressure on attendance and participation, creating knowledge and on attitude change in small groups, because feedback to the broadcast is comparatively immediate (Jamison and McAnany 1978)

2.5 The Place of Indigenous Languages in the Kenyan Media

Lent (1975) cited noticeable instances in Bolivia by indicating that Indians who formed a statistical majority of the population, their language was termed as the vernacular language, while their newspaper as the minority press. In this case, media had very little identification with the masses. In South Africa however, before its transition to multiracial democracy in 1994 as explained by Wabwire (2013: Page 41), the exclusion of and discrimination against the majority was experienced, with the first radio service in 1927 directed at the white English speakers only, and that non-Europeans were only referred to as ‘eavesdroppers’ (Hachten & Giffard, 1984).

Indigenous languages in Kenya are not an exception from such exclusion. Broadcasting in Kenya having been originally modeled on the BBC following the introduction of radio under the British colonial rule in 1927 (Abuoga & Mutere 1988), adopted and employed the language of the former colonial power, English as an official language besides Swahili the national language. This explains why indigenous languages spoken by the masses over decades have been discriminated against from public domain especially in development programs, a situation aptly explained by Lent (1975) as media catering for urban elites being treated as the majority press, while all others as a minority.

Kenya being a pervasively multilingual with more than forty indigenous languages with different dialects (Muaka 2011: Page 220), has been therefore faced with language handicap resulting from this kind of flawed national language planning and language policy affording both English and Swahili languages as higher premier and prestige at the cost of indigenous languages (Orao 2009: Page 78). Mazrui and Mazrui (1998) explained that English having been given a preferential treatment and reinforced in the public domain, still remains very difficult to ascertain the percentage of the people who speak it effectively in Kenya. Githiora (2002) also

states that, although Swahili being the most widely spoken language, its use in radio cannot serve all audiences' needs adequately.

This is a situation described on a report by UNESCO (1991) showing that 80% of Kenyans are neither competent nor eloquent in English and Swahili. This is because a large citizenry majorly use indigenous languages in their daily lives. The report continues to explain that, both English and Swahili radio stations appeal to the elites and the ruling urbanites that for over four decades have used foreign languages to lock out the bulk of the populace from the mainstream of socio-economic dispensation in Kenya, leading to a large section of the citizenry missing much of what goes on in the public. Therefore, there has always been a need for a wide media coverage using local languages that could address diverse local dynamics of the plural Kenyan population.

2.6 Vernacular Radio Landscape in Kenya

Kenyan Government, like those newly emerged African governments set out to change the media organization, control and meet the goals of a new society by building a national consciousness under a new relationship (Lent 1975: Page 21). However, not much so far had really changed because, even after the attainment of the independence, broadcasting in Kenya had remained over decades, a state owned radio station (Wabwire 2013: Page 44).

Broadcasting media was primarily regulated under provisions of the Kenya Posts and Telecommunications Corporation Act (Chapter 221 of the Laws of Kenya) and the Kenyan Broadcasting Corporation Act (Chapter 411 of the Laws of Kenya). In her writings on Media Policy in Kenya, Okello (2000: Page 77-78) argues that the State Corporation, KBC had been given power for the control of receiving sets, wireless and television broadcasts, and for the licensing of dealers in the repair of such sets. Everybody was expected to renew their permits annually and remittances were made to KBC and not to the State.

Okello (2000) summed up by stating that such kind of monopoly from the State Corporation led to emerging needs to perhaps limit the number of frequencies held by a single owner and also to improve the level and quality of information exchanged and allowed to flow. All these reasons give a justification for media privatization that led to the emergence of various FM radios offering different frequencies for commercial purposes.

The Communication Corporation in Kenya has also gone through various changes as part of the move towards liberalization. The Kenya Broadcasting Cooperation Act (1989) provided the main regulatory framework. The Task Force on Press Laws (1993 and 1996), constituted to look into media ownership, licensing and development, resulted in the enactment of the Kenya Communication Act in 1998 which in turn, led to the creation of the Communication Commission of Kenya (CCK) in 1999 as the media regulatory body (CCK, 2010).

With the technological development, transistor radios were invented and this drastically reduced the costs of radio sets. The development of Frequency Modulation (FM) also transformed transmission of signals making it easy to transmit over long distances without interference by static (Van den Ban & Hawkins, 1992). The introduction of multiparty politics in 1992 led to the liberalization of Kenyan Press. Kenya therefore witnessed unprecedented growth in the media sector (Odero & Kamweru 2000). The floodgates opened with the licensing of the first ever FM station in Kenya, Capital FM in 1996. Since then, the number of FM stations targeting different age groups and classes has risen (CCK 2010).

Broadcasting in the local languages has also undergone the same kind of growth. In 2000, the first local language radio, Kameme FM (Kikuyu) was on air. In 2004, new media law liberalized legal framework, increasing the number of local radio stations. According to CCK (2010), there are more than thirty stations broadcasting in languages other than English and Kiswahili. Royal Media Services having a particular niche in this area, with eleven of its FM stations broadcasting in various local languages. Radio Nam Lolwe to date remains one of the leading vernacular stations broadcasting in Dholuo. KBC also runs five vernacular stations and seven vernacular regional services. CCK notes that, more local language stations are awaiting licenses.

The media landscape is now dominated by regional vernacular radio stations which are very popular and unique to each region (Synovate Kenya 2010: Page 120). These vernacular radio stations have overshadowed other stations with national reach. The Synovate report expressed this notion by showing that 81 per cent of Kenyans aged 15 years and above in rural areas use vernacular as their main language while at home. The popularity of these stations therefore cuts across all social classes and age. Another recent research by Steadman (June 2008) on listenership of the FM radios showed that different radio stations have most listeners at different times of the day depending on the programs on air then.

Radio has become the most popular and accessible medium in Kenya, with more than thirty commercial, state-run and community based stations on air (Synovate, 2009). The Steadman Media Services study (2000) indicated that 98% of Kenyan households own a radio set. Another research carried out by KARF Audience and Synovate (2011), also indicated that 95% of all Kenyans listen regularly to the radio, making it a fordable tool of mass communication in Kenya. The vernacular radios are popular in rural areas, and this has been affirmed by editors and owners of vernacular radio stations emphasizing the fact that local language programs play an essential role for the development and participation of rural communities, in which a significant number of people do not communicate in Swahili or English (MCK 2011).

Today vernacular radio stations have nearly equalized the number of linguistic groups in Kenya. A report by BBC (2008) shows that by 2007, vernacular radios had 27% of radio market. They have therefore become the voice of grassroots since they offer ideal platforms on which the marginalized, rural and semi-urban populations can interact with the rest of the nation and of the world by using the language they understand best and access information that in turn shape the development agenda (Githaiga 2008: Page 22).

According to the BBC World Service Trust (2007), the vernacular radio stations keep increasing not only because of their number of listeners, but also their reach in the country, which has expanded from being concentrated in the urban areas to covering whole regions and, in some cases, the entire country. All the relevant stakeholders in the rural development have recognized the fact that the indigenous languages are strong and play a key role in everyday communication in most of the rural communities in the country.

The emergence of vernacular broadcasting has become a central component of radio broadcasting, an outcome of liberalized market that has shifted broadcaster's attention to the rural audiences which is the largest section of the population. It is therefore important to study the vernacular broadcasting component due to its ability to influence development. Its proximity in terms of language used and material broadcasted becomes important to its audience which is critical in developing countries like Kenya (Odero & Kamweru 2000). Vernacular broadcasters therefore carry more local content that is relevant to their target population and allows for fine targeting which makes it possible to include very specific content that are only relevant to a particular group of people or region.

Vernacular broadcasting is now considered a major source of initial and/or additional agricultural information to farmers in many countries around the world. This role becomes essential more so for such areas like in the rural where agricultural extension services are not well established and where there is a greater likelihood that information broadcast on radio could easily be picked up and repeated to others through interpersonal channels (Coombs & Ahmed 1978). It is a powerful tool therefore used in promoting agriculture and rural development (FAO 2001; Chapman et al. 2003).

Vernacular radio stations have been used to lead listening farmers to make substantial changes in farming practices in order to increase their crop yields. Therefore, replacing the extension agents or taking the place of needed but unavailable agents with radio programs seemed to be a cheaper way of extending the voice of expertise, while the project remains in operation (Hornik 1988). The need to disseminate the adoptable agricultural practices using the resources available to the target farmers would significantly improve crop yield and profitability. This is because, it is assumed that those practices would be adequately described over series of radio broadcasts, and that the voice of the radio would be sufficiently authoritative that farmers would listen to it, believe it, and act on its recommendations.

2.7 Factors Affecting Adoption of Agricultural Innovations

Even as media plays its role of disseminating information, the actual use of the said information is a different matter all together. Research has proved that the most major obstacle to improvement in farm productivity is farmer knowledge and attitude, such that, to change behavior, entrenched belief systems and values takes much more than just exposure to certain information (Hornik 1988: Page 52). The main problem however, is to get that knowledge is applied by its receivers. There is need therefore to accelerate the inflow of productivity and generating ideas to rural areas. It is in this innovating activity that media can be used to their greatest advantage in development (Roling and Ascroft 1971: Page 17).

Therefore, information from mass media like radio for that matter does not affect every issue or every audience member, and those who are affected will not necessarily be affected in the same way. In connection to this, Rogers (1962) and his colleagues in explaining the Diffusion of innovation noted that an innovation does not spread to different members of a group at random.

Literature on the drivers of productivity growth shows that the development of education and awareness leads to the adoption of agricultural information about types of crops to be planted and use of modern inputs like fertilizers and certified seeds (Mittal and Kumar, 2000; Kumar and Mittal, 2006; Kumar and Rosegrant, 1994; Evenson et al., 1999; Fan et al., 1999). Therefore individual farmers with certain psychological, social and economic characteristics are first to adopt an innovation (early adopters), followed by early majority and finally by the late adopters as long as the diffusion process is not interrupted by intervening factors (Mbugua 1974: Page 12; and Rogers and Shoemaker 1971: Page 182). In connection to this, Hornik (1988: Page 31) also explained this notion by stating that better-educated farmers are better able to deal with, and have greater access to external information services hence are the earlier adopters of innovation.

Shingi and Mody (1973) also argued that the variables of the receiver become essential in either adopting or rejecting the innovation. In order to facilitate the role of diffusion and adoption of innovation, farmers must have the knowledge and skill, willingness and situational ability. There are also constraints that can hinder an individual to adopt an innovation i.e. *Ignorance* which is lack of knowledge about the innovation in general and required skill to use it; *Unwillingness*, the negative attitude towards adoption of an innovation or towards its attributes; and *Inability* to use an innovation may be because of lack of finances, inputs or resources.

Scholars of the adoption process have recognized that an individual's decision about adopting or rejecting an innovation is not usually an instantaneous act, but rather a process that occurs over a period of time and consists of a series of decisions (Crouch and Chamala 1981: Page 27). An individual therefore adopts an innovation in the following sequences: *awareness*- of the new idea after hearing about it for the first time; *interest*- in the new idea i.e. realizing its possible benefits; *conviction*- accepting the new ideas claims made about it as true and beneficial; *trial*- experimenting with the idea on a small scale; and finally *adoption*- if the idea proved satisfactory during trial stage. Communication of Agricultural information through mass media therefore, is not always linear, but it also involves the expression of farmers' needs and problems to the sponsors of Agricultural information through media forums such as radio forums, road and talk shows (Rogers 1962: Page 45). This will also influence the level of adoption among farmers as radio stations will be able to persuade peasant farmers to adopt the agricultural content they broadcast.

Using the Media and Knowledge Gap Hypothesis, Okigbo (1985) in his analysis, “Is development communication a dead issue?” argues that as *‘infusion of mass media information into a community increases, only the segments with higher social-economic status tend to acquire the new information at a faster rate than lower status segments’*. And therefore development that was meant to benefit the poor ends up not doing so, and consequently the rich get richer and the poor remain so.

2.8 Past Studies in Uses of Media in Development

The use of radio in agriculture is not a new concept. But the use of vernacular broadcasting is in its initial stages in this country and thus it is important to understand how vernacular broadcasting can be used in agriculture, how we expect it to play a crucial role in meeting farmers’ needs and in improving their adaptation to climatic changes (Bhavnani et al., 2008). Despite the increasing rural demand for relevant and timely agricultural information, the benefits remain unevenly distributed among people. The main causes of this are use of limited extension service to access vast rural populations; and use radio stations with national reach to access rural people who rarely use national language in their daily undertakings.

The potential of radio to motivate listeners to take action, modify behavior, and undertake activities is evident in the available literature from a worldwide scenario. Radio and other mass media have been used to support agriculture in many places. In some cases, radio has been used effectively to advise populations of new government policies and to encourage discussion, feedback, and eventual support for new measures (Hornik 1988: Page 71).

Radio has also been used to promote community development, innovation, and other programs in which self-help and community participation are essential (Griffin 1976). However, there is some evidence that radio alone can bring about results (ray 1978; Cooke and Romweber 1977). Other reports have examined the results of radio when used in conjunction with some form of interpersonal support such as discussion / study groups, printed materials or contacts with extension workers (Cerqueira *et al.*, 1979; Bordenave 1977), and found them to be very efficient and effective.

According to Bertolini (2004), knowledge and information are important factors for accelerating agricultural development through increased production. Vernacular broadcasting could

make the greatest contribution by telescoping distances and reducing the cost of interaction between stakeholders, since it has the potential to help farmers in the entire cycle of production, i.e., from production to sales.

The National Agriculture Innovation Project initiative (NAIP) of the Indian Council of Agricultural Research (ICAR), Government of India, has also pointed out the need for the use of local radio stations to reach rural farmers in the country in order to understand their successes, failures and gaps and ensure that they meet farmers' expectations and needs so that they can better manage risk.

In many of the Third World countries, starting from Asia, Latin America and Africa, there are concerned efforts by Governments to steer its media towards development goals. Asia for example where the British had established a flourished Press system, the Press Foundation of Asia formed in 1967, was to report news about economic development (Altschull 1995).

In Latin America, many countries have over the years made many attempts to use the media to steer development in Agricultural programs. Gerbner (1984) outlines many such initiatives, like Radio Sutatenza was established in 1949 to broadcast programs of basic education and to promote community development in Health and Agriculture. There was relative success in a number of those development programs. As a result, there was the establishment of some one hundred radio stations in virtually all countries in Latin America. Likewise in Guatemala, with the support from USAID, an experimental program of daily agricultural Radio broadcast was started in 1973 to offer farmers information which would assist in increasing farmers' yields.

The ECA-FAO report (1971) on extension in Africa states that radio was used at every site studied by the project, including Ethiopia, Kenya, Madagascar, Malawi, Senegal, Tanzania, Uganda and Zambia. In Uganda agricultural programming was broadcast seven hours per week in nineteen languages (Nelson and Kazungu 1973). In Tanzania (Hall and Dodds 1977) radio was used in food growing campaigns to motivate its audiences. Some countries have no other feasible way of reaching their rural people with national policies on farm production i.e. Botswana, used radio primarily to inform its largely illiterate population of the contents of its national development plans on agriculture (Colclough & Crowley 1974).

The increasing number of radio sets and radio stations in developing countries indicates that radio broadcasting can play a strong role in rural development. The effectiveness of this medium can be further enhanced if radio stations are localized and geared to programming that meets the specific interests and needs of their audience e.g. DZLB , the rural educational radio station of the University of Philippines at Los Banos (Gomez 1970: Page 91). The challenge of development today goes beyond modernization per se (Githaiga 2000: Page 55). Development today involves the mobilization of populations to participate in several endeavors. It involves the harnessing and increasing of the population's ability to survive better in their situations.

Okwu, Kuku and Aba (2007) in a study that investigated the use of radio as a medium for agricultural information delivery to farmers in Benue State in Nigeria found a high level of listenership to the programs. The study found that 66% of the respondents listened to the agricultural programs aired on Radio Benue and 42% of the listeners indicated that they found the programs relevant to their agricultural informational needs. This means that some people listen to radio programs due to the content offered.

Kenya Agricultural Research Institute (2009) newsletter, suggested that Farmer Voice Radio Audience does a survey in 2009 to examine radio accessibility, listening habits, and listenership preferences of small farmers in Kenya. Results of the survey found that 98% of farmers have access to a radio message from various audio technologies. Two key factors were shown to contribute to radio listenership. These were language of communication and content. Farmers prefer listening to relevant, interesting and diverse programs in their mother tongue. Programs with the highest listenership include the news, sports, and politics. Farmers also listen to agricultural programs, but they feel that these programs are often centered more on farm inputs than their needs and preferences (Kenya Agricultural Research Institute, 2009).

2.9 Theoretical framework

The purpose of this section is to review and incorporate relevant information that provides theoretical framework of this study. The theories which are thought to be relevant to the study include the Rational Choice Theory and Innovation-Decision Model.

2.9.1 Rational Choice Theory

Rational Choice theory is an influential tradition in understanding an individual choice of action in either social or economic set up. The original conception of the approach was based on the research seeking patterns of behavior in society that reflect the choices made by individuals as they try to maximize the benefits and minimize their costs. The approach therefore assumes that individuals always make prudent and logical decisions that provide them with the greatest benefit or satisfaction and that are in their highest self-interest (Randall 1988: Page 352). It also focuses on the individual actor as being able to consciously choose among alternatives in a fashion consistent with his or her best interest.

This 1960s and 70s theory pioneered by scholar George Homans (1961) and later developed by Peter Blau (1964); and Coleman (1973) postulates that individuals choose the best action according to stable preference functions and constraints facing them. According to Homans (1974), the choice to behave in a certain way depends on the behavior's likelihood to a more favourable reward in comparison to available alternatives. Therefore, for all actions taken by a person, the more valuable to a person the result of his action is, the more likely he is to perform the action.

Basic to all forms of rational choice theory is the assumption that complex social phenomena can be explained in terms of the elementary individual actions of which they are composed. This standpoint, called methodological individualism, holds that: 'The elementary unit of social life is the individual human action. To explain social institutions and social change is to show how they arise as a result of the action and interaction of individuals' (Elster 1989: Page 13). An individual farmer will therefore make a rational choice to seek for the farm radio messages he listens to and applies them on his farm if this will contribute to the improvement of his farm productivity.

In relation to this, Lindenberg (1985: 100); Heath (1976: 3); Carling (1992: 27); and Coleman (1988) cited in Randall (1988: Page 352) pinpointed that individuals act purposively towards their desired goals, usually acting to maximize their utility shaped by values or preferences. Since there are conditions of scarcity, individuals must make choices among alternatives and decisions have to be made before taking an action about how individuals should act by comparing the costs and benefits of different courses of action; the means of attaining these goals and calculate that which will be best and give them the greatest satisfaction. Therefore a

peasant farmer, who wishes to improve his farm productivity, will rationally decide on the best channel of communication in receiving agricultural information depending on the value and rewards expected from it. He will also be able to choose among many radio stations which he thinks is relevant and addresses his common needs and one that he can identify himself with. Therefore, choices and decisions that one makes are based on personal needs and values that one wishes to fulfill.

According to Lindenberg (1985: Page 101-102); and Homans (1974: Page 11), rational choice model is more firmly founded in the real world i.e. individuals have real interests hence a real basis of action. They do things that lead to rewards and avoid whatever they are punished for. Reinforcement through rewards and punishments therefore becomes the determining factor in human behavior. Elster (1989) also explained this notion that when faced with several courses of action, people usually do what they believe is likely to have the best overall outcome. Individual farmers for that matter are therefore free and capable of thinking for themselves and will act rationally to decide whether to use the farm radio content or not depending on rewards or failures from past experiences.

This theory is closely related to the Social Exchange theory which postulates that human behavior is determined by expected profit. In this light, Blau (1964) cited in Randall (1988: Page 343) demonstrates that an action is performed if it is expected to be rewarding; and it is discouraged to the extent that it is expected to incur costs i.e. a farmer rejecting or discontinuing using a new fertilizer or certified seeds he learned from radio program that led to poor yields.

The central relevance of this theory in as far as this study therefore has a lot to do with the rational choices an individual makes whether to adopt the information or not depending on the rewards that are attached to the information to be received, and also the cost and benefits attached to the course of action that one might pursue. This is a notion explained by Homans (1974: Page 11-68) that the more often a particular action of a person is rewarded, the more likely the person is to perform that action. Therefore, a farmer's decision to either adopt or reject agricultural information will be determined by the rewards one intends to get out of it. As posited by Singlemann (1972: Page 417) cited in Ritzer (1992: Page 477), a reward may therefore be defined as a reinforcer if it affects behavior.

The idea of 'rational action' emphasizes on a conscious social actor who engages in calculative strategies, and therefore the behavior is determined and shaped by the rewards and punishments that are encountered. This implies that people do those things that lead to rewards and avoid whatever they are punished for hence learn from their past experiences. However this notion might be misleading, like cases where past experiences were as a result of influence by other external factors, hence likelihood of either repeating or abandoning an act. For instance, a farmer who misconceived the concept of using a new farm input and later experiences low yields might blame this on the new farm input he used as not working and later abandons it based on the low yields he received. Likewise a well applied fertilizer that would have led to good yields might be abandoned by a farmer who used it but received very low yields due to inadequate rainfalls and disease infection. Therefore, a behavior of an individual in this approach is purely external and objective without any need to invoke any internal mental states and this shows that our past experience can be misleading resulting into a discontinuation of our action that otherwise could have been rewarding.

2.9.2 Farm Adoption and Diffusion Perspective

This is a paradigm designed by Everett Mills Rogers in 1962 explaining it as a mental process through which an individual passes from first knowledge of an innovation to a decision to adopt or reject and to confirm the decision (Rogers and Shoemaker 1971: Page 99). Scholars of the diffusion of innovation have argued persuasively that the adoption of new behaviors should be viewed as a multistage process. Rogers (1962: Page 76) recognized that this process occurs over a period of time and consists of a series of action such as:

i. Knowledge

This is where an individual is exposed to the innovation's existence and gains some understanding of how it functions. Here, the individual decides which innovation messages to attend to and which ones to disregard. Hissinger (1959) as cited in Rogers and Shoemaker (1971: Page 104), argues that knowledge-seeking must be initiated by the individual and hence is not a passive activity. Therefore, individuals farmers for this matter will seldom expose themselves to farm radio content unless they first feel a need for the information, and that even if such farmers are exposed to such radio content, there will be little effect of such exposure unless the farmer perceives the farm radio content as relevant to his needs and as consistent with his existing attitudes and believes. Therefore, knowledge of innovation can create motivation for its

adoption.

ii. Persuasion

The main outcome of this process is either a favorable or unfavorable attitude towards the innovation which is the belief in the usefulness of the new idea for the individual. It is assumed that such persuasion will lead to a subsequent change in overt behavior i.e. adoption or rejection consistent with the attitude held. Therefore a farmer will actively seek farm information out of the messages he receives from radio that he believes has the quality and is useful to his needs, and ignores others that are not. Therefore a general perception of the innovation such as relative advantage, compatibility, and complexity are therefore developed at this stage.

Therefore, a previous positive experience with the adoption of innovations will create a bank of favorable attitudes to change that facilitates the development of a favorable evaluation of the next innovation considered by an individual. On the contrary, a negative experience from a new farm input that is perceived as a failure can lead to resistance to future new ideas. Therefore Radios such as Nam Lolwe FM for that matter, usually organize for radio forums, road shows and even talk shows in which they present pro-change programs that expose listeners and even give them opportunities to ask questions about programs they listen to and therefore persuade them to use such information. This way, the radio station facilitates the adoption of farm radio contents by its listeners.

iii. Decision

This is a decision between two alternatives i.e. either to adopt or to reject a new idea. It also involves an immediate consideration of whether or not to try the innovation, if it is trialable. A new idea may be adopted at this stage in the process and be used continuously or rejected at a later date due to changes in how the individual perceives the innovation. Therefore, most farmers will not adopt a new farm practice without trying it first on a probationary basis to determine its utility.

iv. Confirmation

The individual seeks reinforcement for the decision he has made, but he may reverse his previous decision if exposed to conflicting messages about the innovation. A farmer who once adopted and started using a new fertilizer on his farm may abandon using it when he gets a better fertilizer or he no longer feels satisfied with the outcome of the input.

Therefore, this study borrows heavily from farm adoption and diffusion perspective and rational choice approaches. The rational choice approach gives an explanation why and how an individual farmer would make a rational choice to use agricultural information he listens from radio. The farmer has to make a rational choice depending on the value attached to the decision he's going to make. Farm adoption and diffusion perspective on the other hand explains those factors that will affect the diffusion of farm information listen from radio right from the source up to the receiver (individual farmer). Since rational choice approach do not clearly show whether the information would be adopted after receiving it or not, the innovation perspective thus fills the gap. It highlights what those factors will influence an individual farmer to either adopt or not adopt an information from radio.

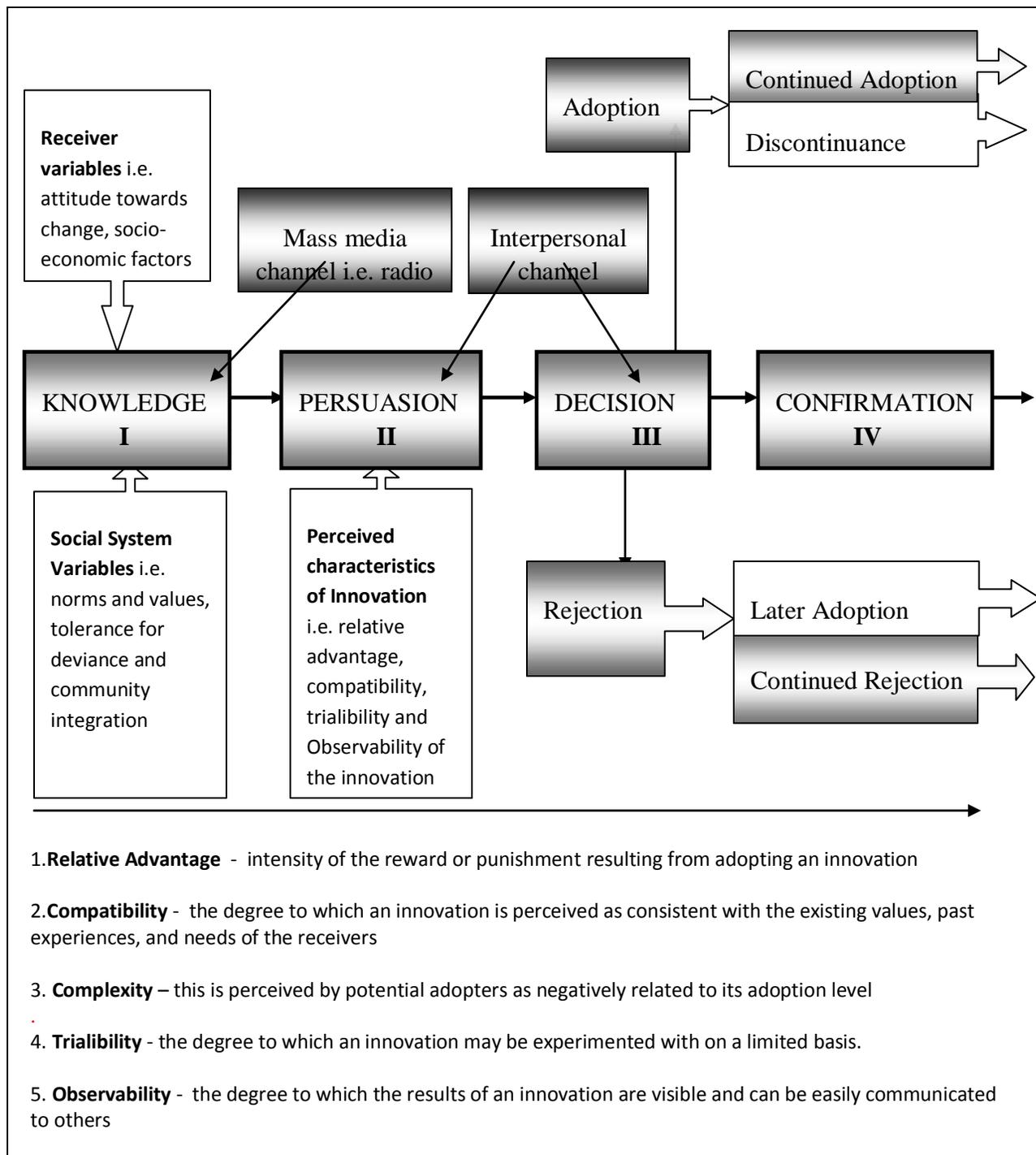


Figure 2.1 Paradigm of innovation-decision process. Source: Rogers and Shoemaker (1971)

According to Rogers and Shoemaker (1971: Page 103), an individual possesses those variables that are present in the situation prior to the introduction of an innovation which can either be determining or mediating factors. These factors influence the level of innovation adoption and its use by an individual. They include: social influence, expressed as the pressure exerted on the individual by the societal norms and values, and opinions of others; channel of communication, either mass media or interpersonal; perceived usefulness or the extent to which a user believes that he or she will benefit from using the farm radio content; and perceived ease of use of an innovation.

Besides the determining factors, the model contains a set of mediating factors that influence the determining factors towards behavioral intention. A farmer for instance finds it beneficial to use farm radio content (perceived usefulness i.e. determining factor) but lack of finances (mediating factor) can significantly undermine the new farm idea adoption. To this effect, mediating factors acknowledged by the model are personal factors, like attitude towards change, strength of perceived need for the innovation, socio-economic factors like education (level of literacy) and availability of finances respectively that would serve as incentives or restraints on the individual's decisions. The model postulates that actual adoption and use is the final outcome of the interplay of the mediating and determining factors.

For this reason therefore, communication channels can be combined in media forums to yield maximum results. In this connection, (Hornik 1988: Page18) and (Rogers & Shoemaker 1971: Page 255) suggested that in the knowledge stage, as individuals become aware of an innovation, they tend to rely on mass media; as individuals move toward persuasion and decision, they tend to rely on personal sources.

2.10 Conceptual Framework

This is a schematic diagram showing the relationship between the independent and the dependent variables. In this study, those agricultural topics aired by Nam Lolwe FM form the independent variable while improved farm productivity is the dependent variable. Personal characteristics and Social factors are the Intervening variables that will affect the level of adoption of the farm radio content. The relationship is presented in Figure 2.2. Knowledge is becoming an increasingly significant factor in production and improving the farm productivity. Timely knowledge about

what and when to plant; what to use to improve the productivity; where and who is buying the farm products are some of the farm information transmitted on radio and important for the decision making of rural farmers.

In this study therefore, the agricultural information accessed on radio Nam Lolwe, is to have an impact on farmers' adoption of new crops, access to timely market information and use of new technologies. This is expected to lead to increased farm productivity, overall improvement of livelihoods of rural households, improved national food security and a motivation increased use of adopted agricultural technology.

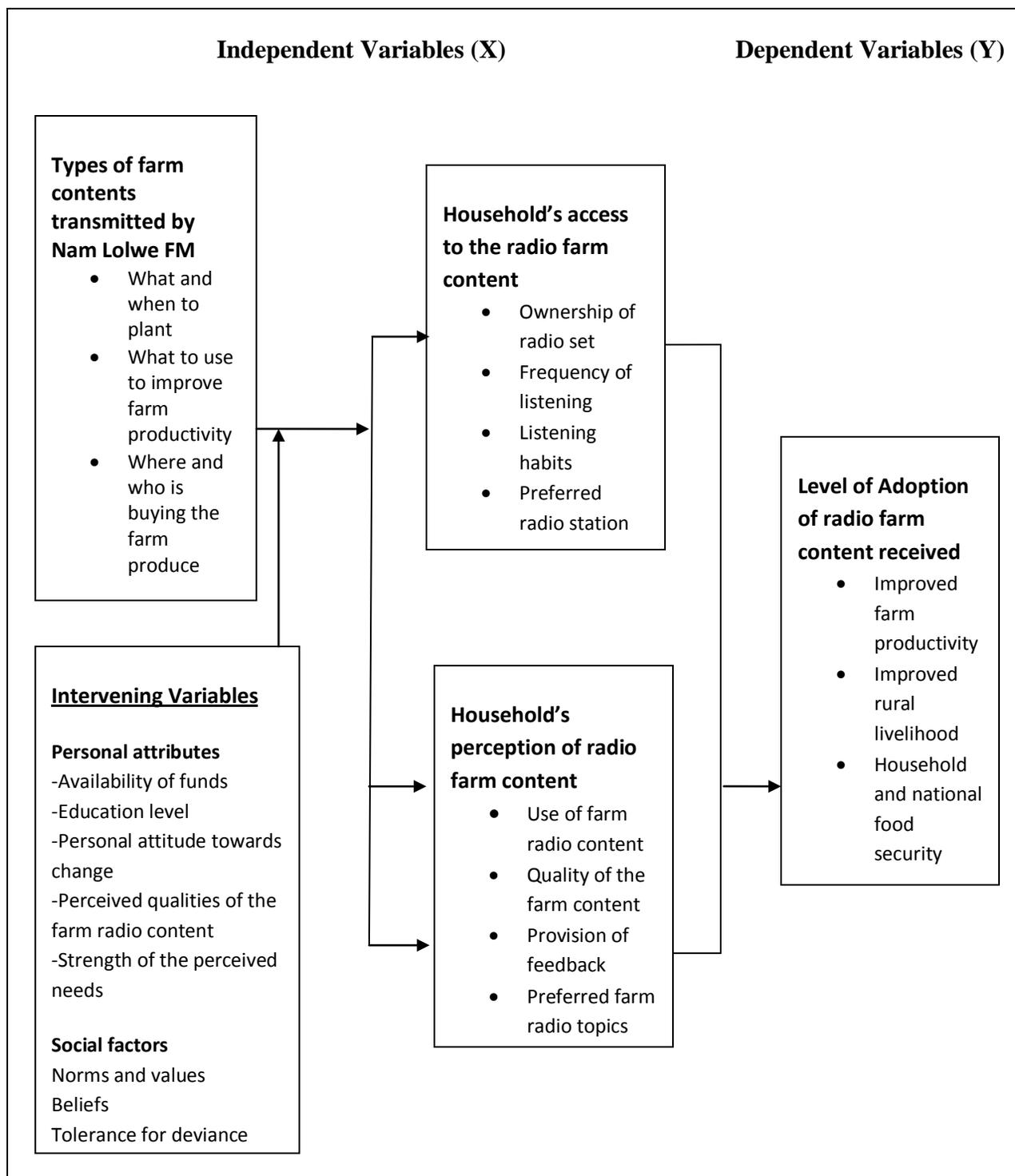


Figure 2.2: Conceptual framework. Source: Author

2.11 operational table

Objective	Variable	Indicators	Measurement	Scale	Analysis
1.To identify the topics on agricultural program presented by Radio Nam Lolwe	Topical issues on farm radio agricultural programs	- agricultural topics within a program -topics of interest - messages learnt from agricultural topics	- preferred agricultural programs and topics	Nominal	Descriptive statistics
2. To find out the level of access of households to vernacular radio stations	Level of access to vernacular radio stations	- frequency of listenership -reasons for using other vernacular radio stations in accessing farm program -continuous use of other sources of farm information.	-Time of listening -listening habits - preferred stations	Ordinal	Descriptive statistics
3. To determine farmers' perception of the content of Agricultural Programs aired by Nam Lolwe FM	Farmers perception of agricultural content	- Use of farm radio content -Quality of the farm radio content	- Preferred agricultural topics - Provision of feedback -Preferred mode of obtaining agricultural information	Ordinal	Descriptive statistics
4.To examine the level of adoption of the info received	Level of adoption of agricultural content	-Use of agricultural information received from radio	- Farm output	Ordinal	Descriptive statistics

Figure 2.3: Operational Table. Source: Author

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This chapter spells out how data for this study was obtained and the research design adopted. The statement of the research problem is re-stated, the target population, the rationale behind the research method is given. Sample size and sampling procedures that was used in the study is also explained. It further describes the data collection methods, research instruments and validity of the method used and data analysis. The chapter finally discusses the ethical considerations that guided this study.

3.1 Study Site and Description

This study was conducted in Kakelo Location, Rachuonyo District of Homa Bay County. Rachuonyo is one of the districts constituting former Nyanza Province. It is located in the Southern West part of Kenya. Kakelo Location is in Kasipul Division which is the largest out of the four divisions of Rachuonyo District namely: Kabondo, Kasipul, East Karachuonyo and West Karachuonyo Divisions. Kasipul Division has the highest population density of 373 persons per square kilometers and with the highest population of 160,143 people and an area of 365.5km², (Rachuonyo District Strategic Plan 2008-2012). This kind of population exerts a lot of pressure on the land space and limited resources to sustain its population and therefore food insecurity is evident.

The Location is further sub-divided into two Sub-locations i.e. Kakelo Kamroth and Kakelo Dudi. Kakelo Location is an ethnically homogenous area inhabited mainly by the Luo speaking people. Like many rural parts of Kenya, farming is the main economic activity. The Location is primarily occupied by small-scale farmers, many practicing semi-subsistence agriculture. The area receives reliable, bimodal rainfall of between 1200 to 2000 mm per year. The region is endowed with well-drained loam and brown dry soils. This type of climate supports crop farming and livestock rearing. Kakelo Location is well known to be producing sweet potatoes for both subsistence and commercial purposes. They also practice animal husbandry. Other crops grown include maize-bean intercropping which also serves as household food supply, groundnuts, bananas, pineapples. Most of the purchase input is certified seeds and fertilizers.

According to the Rachuonyo District Development Plan 2008-2012, the region is faced with development challenges of poor husbandry methods and a bulging population resulting into declining yields, deforestation and soil erosion (Sombroek et al., 1982). There is also little specialization in growing of crops or rearing of livestock; inadequate access to extension services at the divisional and location levels, and high poverty level. According to the geographic dimension of well being in Kenya 2003 Kenya National Bureau Statistics, Rachuonyo District had 74% of district population below poverty level, and at the same time an estimated 67 % of the district was estimated to be food poor.

The Plan also indicates that farm productivity remains low in the location despite the huge potential noted by virtually all development actors. This is because, the location lacks appropriate technology and skills to produce, process, preserve and market its perishable agricultural products such as sweet potatoes, mangoes, pineapples, tomatoes, pawpaw, bananas and sugar cane that are readily available. Lack of access to relevant agricultural and speedy market information for these products, and skills amongst farmers has contributed immensely to low farm productivity either due to the people's inadequacy, low quality, or lack of incomes to access such information. This has hampered the expansion of the market for products from Kakelo Location.

Farmers in Kakelo Location therefore face crop production and marketing constraints that bind them within a cycle of poverty. More than 80% of the population lives in rural areas, and 62% of all households generate their income from agriculture (Rachuonyo District Development Plan 2008-2012). At the same time the location suffers from extreme demographic pressure with an annual population growth rate of 2.12% and a proportion of 62% living below the poverty line (Omiti et al., 2006).

In conclusion therefore, Kakelo Location was found to be confronted with a number of developmental challenges. However there was a major challenge of food security because of the ever growing population and this can only be done by promoting agriculture and rural development by enhancing effective communication amongst farmers and equipping them with relevant information that can enable them improve their farm productivity. These revelations highlight the farmers' problems that necessitated research attention.

3.2 Research Design

Research design is defined as a plan, structure and strategy of investigation conceived so as to obtain answers to research questions, and control variance (Kerlinger 1964: Page 275). A good research design is one which has a clearly defined purpose, in which there is coherence between the research questions and the methods or approaches proposed and which generates data which is valid and reliable. It is therefore the specification of methods and procedures of acquiring information needed for solving the problem.

This study comprised a descriptive research. The intention of the researcher was on a fact finding investigation which aimed at providing information about the role played by vernacular radio broadcasting in enhancing farm productivity among peasant farmers. In this case, effects of agricultural content broadcasted by Nam Lolwe FM on these farmers were also investigated. This research design was used to enable the researcher to ensure that the study objectives were captured during the process of data collection. Both quantitative and qualitative approaches were used as Ragin noted that qualitative and quantitative approaches are not anti one another (Ragin 1985 in Mbatia Page 1992:9).

3.3 Unit of Analysis and Observation

Singleton (1998: Page 69) defines unit of analysis as the basic entity or object under the study about which generalizations are to be made based on an analysis. For this study the unit of analysis was farmers from Kakelo Location. The units of observation were the objects, entity or subject from which data required for the study were obtained. In this study, the units of observation were the Kakelo farmers.

3.4 Target Population

Population is the total collection of an element about which we wish to make some inferences (Cooper and Schindler, 2000). The basic idea of sampling is that by selecting some of the elements in a population, the researcher may draw conclusions about the entire population. The population from which inferences were made was farmers from Kakelo Location. Data was then obtained from both females and males aged between 22 years old and above. This is because the researcher was interested in those who could participate in making decision on land use and practices within the household i.e. married adults.

It should be noted however, that there were other target populations which facilitated the development of these inferences. For instance, the producer and the host of the agricultural program from the FM played a crucial role in providing invaluable information for this study. They were interviewed in Kisumu where the radio station is situated. The researcher also interviewed extension officers at the divisional level to provide additional information.

3.5 Sampling Frame

A sample frame is a list that includes every member of the population from which the sample size is to be drawn. The sample frame for this study was a list of villages from Kakelo Location. It elaborated particular members of the population from which the sample size was drawn.

3.6 Sampling Procedure and Sample Size

A multistage sampling was used to sample villages and household heads. This is an extension of a cluster sampling used when conducting studies involving a very large target population without an appropriate and exhaustive list of its all members. In such a study, the entire population is divided into naturally-occurring clusters and sub-clusters, from which the researcher can either use same or different sampling methods at each stage to sample units required (Wiley, 2005). Multistage sampling became appropriate for this study since it was difficult to get a list of members of the villages and those of households from the entire population in Kakelo Location.

Key Informants of this study were identified using purposive sampling. Patton (2001) states that purposive sampling involves selection of participants, settings or other sampling units that is criterion-based. The sample units were chosen because they bore particular features or characteristics which enabled a detailed exploration and understanding of the subject under question.

3.6.1 Sampling of Villages and Households

The Location has two Sub-locations with 14 villages: Kakelo Dudi and Kakelo Kamroth having 5 and 9 villages respectively. These villages are divided into heterogeneous households from which farmers were finally selected for the study. Using multistage sampling method, purposive sampling technique was employed at both village and household levels to sample villages and households which later formed primary and secondary sampling units respectively.

Using the list of the heterogeneously distributed villages of both sub-locations, with the help of Assistant chiefs and Agricultural officers working in those areas, 3 villages were purposively selected from each sub-location based on better farming and radio listening habit giving a total of 6 villages. Agricultural instructors and the village headmen of the sampled villages were asked to provide a list of all household heads of the sampled villages from which a sampling frame was generated. The researcher with the help of the village heads purposively sampled 10 household heads from each village that were perceived as better farmers with good radio listenership habit, giving a total sample of 60 households. This process enabled the survey to capture the heterogeneous nature of respondents of great interest to the study and the diverse shades of opinions among them.

3.6.2 Sampling of Key Informants

The researcher further purposively selected 2 staffs from the radio stations at Kisumu Office i.e. the producer and presenter / host of the agricultural program. Two (2) Agricultural Officers who were working with the local farmers from the Rachuonyo South District Office were also sampled as the key informants i.e. crop officer and the livestock officer. The two sub-chiefs from the location also participated in the study. These sample units (6 key informants) were chosen because they bore particular features or characteristics which enabled a detailed exploration and understanding of the subject under question.

3.7 Tools and Methods of Data Collection

3.7.1 The Pre-test

The researcher began the process of data collection on 15th of August 2014. To enhance validity of the instruments to be used in this study, the data collection tools were pre-tested in those villages which were not sampled for the actual study before the final tools were administered. It involved administering five questionnaires and conducting key informant interview with the area Chief. This helped to evaluate, ascertain and clarify that the tested instruments were valid to capture all the data as expected and also to fine tune the questions, checking the relevance, sustainability of the questions in line with the objectives. The actual fieldwork commenced on 18th to 22nd of August 2014. The study employed household survey, personal interviews and observation as methods of data collection where questionnaires, interview guides and observation check list were used as tools for collecting both quantitative and qualitative data as explained below.

3.7.2 Collection of Quantitative Data

The primary data was collected using a household survey whereby a semi structured questionnaire was used as a tool to collect data from the household heads. Face to face method was employed by the researcher to administer the questions to the respondents. Data was collected on demographic characteristics of households, household's radio listenership, household's preferred topics of the program as well as household's level of adoption. During the entire data collection from household heads, the researcher was accompanied by the village elder to identify the household that had been sampled for the study.

Secondary data on the other hand was obtained from books, articles and government reports. The review of such data was important in cross checking the primary data.

3.7.3 Collection of Qualitative Data

The researcher conducted key informant interviews using interview guides to obtain qualitative data from the key informants. These included the producer and host of the program of the radio station who provided information about the radio station and how their activities have contributed to the productivity of farm production among farmers in Kakelo Location. Agricultural officers from Rachuonyo South District operating in the Location were also interviewed on their areas of specialization and to give more insights on farmers' activities and challenges they face while improving farm production. The two Assistant chiefs from the Location were also interrogated on distribution of population, better farming practices as well as radio listenership among farmers.

The researcher also observed the surroundings and collected first hand information that could not be captured by the questionnaires. These offered an opportunity to record and analyze behavior and interactions as they occurred through the eyes of the researcher. The non-verbal cues that appeared to be important for this research were also captured using this method. Observation check list was used to guide the researcher on what was necessary for the research study and to help in saving time and other resources.

3.8 Data Analysis

Analysis of data was done by both qualitative and quantitative techniques. For quantitative data obtained from the structured questionnaires, it was first edited, coded and entered into Statistical Package for Social Sciences (SPSS) for analysis. The study being descriptive required

descriptive analytical methods which included percentages and frequencies. To enhance clarity, the results were presented in tables, percentages, graphs cross tabulations and charts. On the other hand, Qualitative data from key informants and unstructured questions was analyzed by being organized into categories or themes using word tables which were then coded by assigning numbers. The information was then evaluated to determine its relevance in answering the research questions and then summarized into narratives and statements to complement the quantitative information.

3.9 Field Work Experience

The researcher encountered various challenges though the experience was quite enriching. The study was conducted during the rainy season and most of the respondents were out harvesting on their farms. Getting the household heads was therefore problematic as most would not be available at home so the researcher had to look for them in their farms. In addition, most of the respondents were barely around the village in the afternoons. Some were to go to markets, graze animals at far distances and this meant that the data collection process and time of interview was prolonged. In most cases data collection would start as early as seven in the morning in order to track down those who leave their homesteads early in the morning for other duties.

However, the researcher managed to work well within the available time and in most cases had to interview the respondents in their farms to obtain the necessary information. Since a list of respondents to be interviewed had been developed with the help of village heads and their contacts were also made available, prior arrangements was being done a day before the interview to allocate time and place for allocating the respondents so as to avoid disrupting their normal activities. This was done easily by use of motorbike to reach the scattered respondents.

Most of the respondents expected to be given tokens or aid for participating in the study. However, the areas assistant chiefs, researcher and the village heads explained that the researcher was a student and that she had no money to give as the study was purely academic.

3.10 Research Ethics

The researcher maintained research ethics by following the procedure outlined by the University and sought permission from the relevant authorities before carrying out the study. Honesty, integrity and confidence were highly maintained throughout the study.

CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS

4.0 Introduction

This chapter consists of data presentation and analysis in the form of tables, and interpretation of the findings. The chapter is organized into: Household characteristics; type of radio content accessed by household; household access to other sources of agricultural information; household perceptions towards farm broadcasts; and level of adoption of the farm broadcasts.

4.1 Household Characteristics

Household characteristics are the individual attributes that make up a family in terms of behavior and the specific roles undertaken (Hart, 1994). They are the basic components that distinguish and identify one household from the other. They include those socio-demographic information that determine the kind of livelihood a household undertake hence the outcome of those activities. This section describes the characteristics of household heads in Kakelo Location in terms of age, gender, marital status, economic status, and level of education of the household head. This was to establish the extent to which the vernacular broadcasting has improved farm production in Kakelo Location.

4.1.1 Age of the Household Head

Age has often been used as a measure of farmer's experience in use of a farm technology. On the one hand, young farmers may be more knowledgeable about new practices and more willing to bear risks that come with adoption. On the other hand, older farmers may have more experience and resources that allow them to decide effectively and positively on technology use. A review of the respondents' ages as shown in the table below indicated that majority of farmers' ages (40%) of the respondents are 50 and above, while those ranging between 30-39 and 40-49 years of age were 25% each. Note that only 10% of farmers were between 20-29 years. This could be attributed to the fact that many people in this category are still schooling or have migrated to urban areas in search of employment.

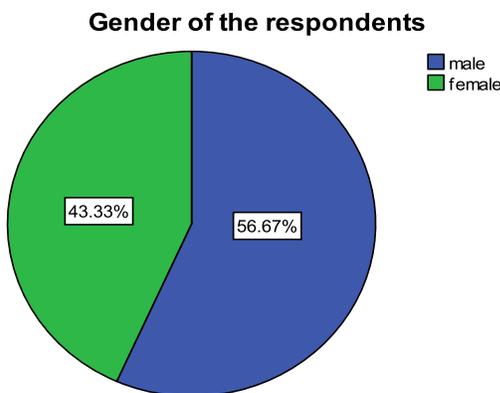
Table 4.1: Age of the Respondents

Age Brackets of Respondents	Number of Respondents	Percent
20-29	6	10.0
30-39	15	25.0
40-49	15	25.0
50 and above	24	40.0
Total	60	100.0

4.1.2 Gender of the Respondents

The distinctive feature of the respondents of this study was that there were more men (56.7%) than women (43.33%) as shown in figure 4.1 below. This meant that the information collected was representative of both genders as both men and women were given chance to air their views on how vernacular radio broadcasting had improved their farm production.

Figure 4.1: Respondent’s Gender



4.1.3 Respondents’ Level of Education

Education is among the key variables often associated with technology use. According to PEU/PEC (2001), rural education is especially beneficial to rural farmers when new technologies are introduced into agriculture. Therefore, it is crucial to improve rural education in order to raise agricultural productivity and farm incomes, because there is a possibility that education provides farmers with ability to perceive, interpret, and respond to new information much faster than those without formal education.

Table 4.2: Education Level of respondent

Level of Education	Number of Respondents	Percent
Primary	38	63.3
Secondary	13	21.7
Tertiary	6	10.0
No formal Education	3	5.0
Total	60	100.0

The study results in Table 4.2 above shows that majority of respondents (63.3%) had received some basic form of education i.e. attended primary schools. We can then claim that having attained basic education i.e. to be able to read and write is a positive sign of the population since they are better able to process information and search for solutions to alleviate their production constraints. Notably, 21.7% of the respondents attended secondary schools with only a few (10%) of the respondents who received some form of tertiary education. This probably indicates that there was a lower transition rate from secondary to tertiary schooling in the location. The study also found that only 5% of respondents had not received any kind of formal education. According to the Republic of Kenya (2007), low education tends to hinder farmers from engaging in commercialized and sustainable farming, leading to low productivity.

4.1.4 Respondents' occupation

In rural areas, people are frequently involved in multiple activities. Women for instance, are more likely to be engaged in farming as well as domestic activities, therefore respondent's occupation in this study was used to refer to that activity that generated the most income. To begin exploring the extent of poverty in this study area, the respondents were asked their main sources of income. The study revealed that 43.3% relied entirely on farming, 31.7% got their income from both business and farming, while 25.0% relied on both employment and farming as shown in Table 4.3 below.

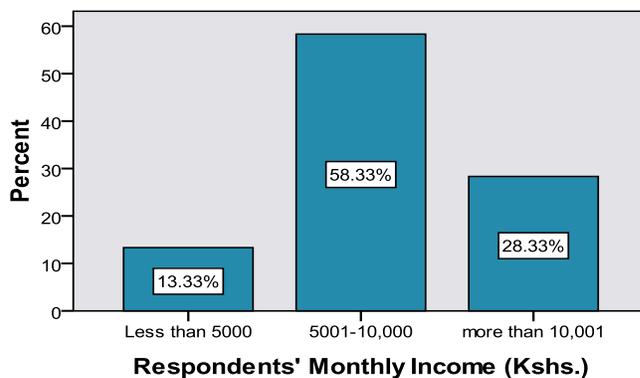
Table 4.3: Respondent's Source of income

Occupation	Number of Respondents	Percent
Farming only	26	43.3
Farming and Business	19	31.7
Farming and Employment	15	25.0
Total	60	100.0

4.1.5 Respondents' Income

The Republic of Kenya (2007) indicates that 63% of the population in Nyanza earns less than one dollar per day, thus living below poverty line. Study findings in Kakelo Location indicate that income in this area varies widely among respondents as shown in graph below. The study found that 53.3% of the respondents earned less than Kshs. 5000, 26.7% of them earned between Kshs. 5001 and 10000, while only 20.0% of the respondents earn more than Kshs. 10000. Those respondents earning more than Kshs 10000 reported that they were engaged in more than one income generating activity such as farming, employment and business. This explains that majority of household heads survived on averagely a dollar per day as shown by the graph below, which is an indicator of poverty. This is because such families were less likely to buy farm incentives and inputs that could enable them improve their farm production.

Figure 4.2: Respondent's Level of income



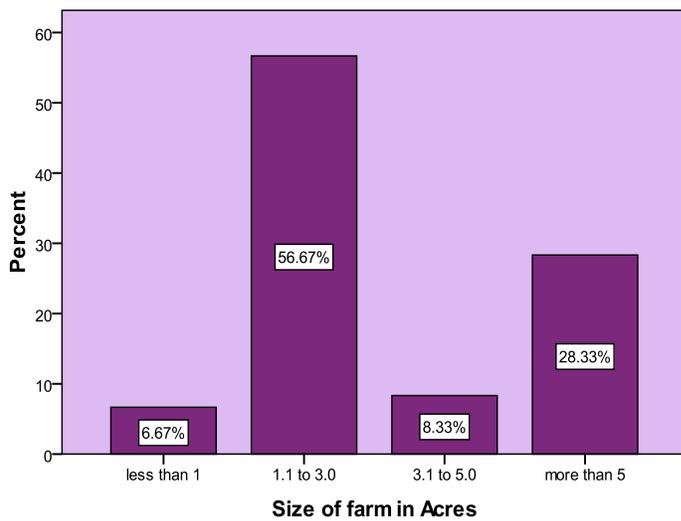
4.1.6 Respondents' Size of Land in Acres

Size of land in acres is one of the house assets owned by the respondents, which include both productive and non-productive assets held by rural households. Productive assets investigated in this study included land, livestock and crops, while non-productive asset was type of house owned by the household. This section described size and ownership of land, as well as type of house owned by the household.

The findings from figure 4.3 below revealed that only 6.7% of the respondents had less than 1 acre of land where they practice farming, majority of the respondents (56.7%) owned between 1.1 and 3.0 acres of land. About 8% of the respondents owned between 3.1 and 5.0%, while 28.3% mentioned that they owned more than 5 acres of land. According to Republic of Kenya

(2009), agricultural production in Kenya is carried on farms averaging 0.2-3.0 acres. This report is in agreement with these study findings in which respondents reported that, the average land for farming per household was less than 1.0 acre. The small pieces of land owned by these farmers pose a serious problem in relying on the same to boost farm incomes. This shows that majority of farmers from this area own small pieces of land where they practice farming, making them to carry out farming on small scale contributing to low harvests which cannot take them for long periods of time resulting to faster depletion of food and hence calls for better farming methods.

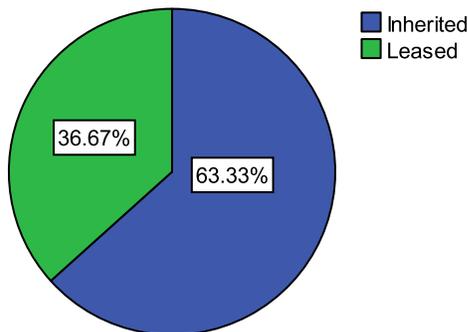
Figure 4.3: Respondents' Size of farm in Acres



4.1.7 Respondents' Source of Land

Land is part of the physical assets that households in the rural areas own. Land ownership determines the kind of activities a household can undertake hence determining livelihood outcomes.

Figure 4.4: Source of Land



From the findings, 63.3% of respondents mentioned that they own land through inheritance, while only 36.7% own land individually in that, by leasing and buying. As it was put across by the Chief of Kakelo:

“One may own a piece of land but lacks the capacity to produce, and therefore leases it out to another person who can utilize it for a short period of time”.

During the interview with the respondents, the study also revealed that most land in the study area was jointly owned by family members and the name on the title deed was of a male member such as a grandfather, uncle, husband etc and that dividing land to various sons of the family was also not encouraged if the father was still alive. This was done to discourage cases of sons selling the land without the family’s consent. In this regard, the study observed that, credit was inaccessible to farmers due to lack of collateral. This sentiment was captured in one of the interviews with the respondents:

“I wish I had my own piece of land with full authority. I could have accessed funds from any loaning institution in order to buy grade cows that can give me more income than the local ones that I have. This happens because I still use my father’s land and I do not have much source of income that I can use instead”.

As a result therefore, the study revealed that majority of young household heads lacked the accessibility to control the farms they use, especially when land is to be used as collateral to access loan. This may be the reason why many respondents could not use their land for commercial purposes limiting them to improve their farm production.

4.2 Nam Lolwe FM

Consensus emerging from the key informant interview with program producer and host revealed that the station was started in 2007 as need for broadcasting in vernacular languages grew. It started broadcasting in Kisumu City and its Luo speaking regions of Nyanza and soon after expanded to Nairobi and its environs. Nam Lolwe FM operates under Neural Digital broadcasters Limited, with the sole purpose of informing, educating and entertaining its listeners by giving them a balanced economic, political and social debate that the audience thrives for using Dholuo as its primary language of broadcast.

Radio Nam Lolwe was formed as a realization of an unmet need for programs that provide information to enhance people’s livelihood, in terms of their cultural and socio economic

development. The station had since introduced programs targeting cultural development, health issues, environmental concerns, children and youth. The programs target all age groups, both in urban and rural with some programs dedicated to specific groups like a regular show for school-children. It was found that it also ran talk-shows mainly covering agricultural programs targeting farmers, lifestyles, family issues as well as political and religious issues.

With the realization that small enterprise is the engine for national economic growth, the FM developed small enterprise where farmers were classified as small entrepreneurs, and led to the inception of agribusiness program targeting the farmers popularly known in Dholuo as “*pur mariek mondo iyud mwandu*”, an agribusiness magazine whose objective is to change the mindset of many who take farming as an avenue of wealth creation as opposed to the notion that farming was perceived as the business for the poor (Radio Nam Lolwe, 2013).

The key informant interview also pointed out that the program was well researched and handled by a team of professional radio journalists from radio Nam Lolwe. The program was therefore found to be interactive which targeted and responded to business issues of small producers and ultimately growers of other farm produce. It also supplied timely and relevant business information to the farmers with an aim of boosting their productivity and profitability. The radio staffs confirmed that the program had achieved this by increasing the farmers’ access to information relating to markets, products, inputs and more efficient production methods in the agricultural sector. The program had also promoted farming as a commercial enterprise, and increased production and market demand for agricultural products.

4.3 Type of Radio Farm Content Accessed by Household

The first objective of this study was: “To identify the topics on agricultural program presented by Radio Nam Lolwe”. Its indicators were: Agricultural topics aired on radio; Respondents’ topics of interest; and the lessons farmers learnt from the program.

4.3.1 Agricultural Topics Aired on Radio Nam Lolwe

The key informant interviews with both the producer and host of the program revealed that the agribusiness program had six main segments:

- i. Duond Jopur** (*Farmers Voice Segment*)

This entailed field recordings on successful stories from those farmers who had benefited from

the program, as well as queries on the topic of the day which would be answered later in the subsequent segments of the program. The findings on this study served to reinforce earlier conclusions by Rogers, 1971 in the diffusion of innovation model which emphasizes on adoption of innovations by individual members of communities who then diffuse it as it trickles down by sharing their experiences with the new innovation to other members through radio communication. This was captured by the respondents during the interview with the respondents as follows:

“I prefer listening to (Duond Jopur) Farmers’ voice segment, a program where we hear what has happened with those who tested whatever they had listened from radio on their farms. We also share our successes during this segment and learn where one could have missed the procedures that could have yielded to failures on crops”.

ii. Nonro Mag Pur (Expert Segment)

The study found that the agribusiness program carried out pre recorded programs in conjunction with experts drawn from Ministry of Agriculture at Sub county level, change agents from NGOs and Seed companies among other stakeholders. It was revealed that the session tackled main components such as Pests and Diseases control, and value addition while empowering farmers on the need to embark on modern methods of farming. The expert session entailed an in-depth discussion by an expert who has insight knowledge on the topic of the day. The expert provides answers to farmers’ questions derived from the previous topic. This session was also found to provide a platform for farmers to give their feedbacks on farm information they received from the program as well as business tips on managerial skills. The segment also provided extension services that local farmers could not easily access directly from the agricultural officers. The sentiment was captured in one of the key informant interview by the researcher that:

“We have learnt from farmers who listen to our program that agricultural officers have become inaccessible locally, and therefore farmers prefer listening to them on radio whenever we invite them for a talk during the expert sessions” (An interview with the Radio program host).

iii. Ripode Mag Chiro (Market Reports)

This entailed current buying and selling rates of farm produce in different markets within nearby counties and other major towns in Kenya. This segment was found to provide farmers with

harmonious and readily available markets for farm produce as well as prices for farm inputs. Republic of Kenya (2009) indicates that market access is critical to increasing agricultural productivity and commercialization of enterprises so that farming is perceived as business. However, most rural farmers do not have well-functioning marketing channels for most of their farm produce. Study findings observed that, market accessibility was a challenge to Kakelo farmers long before the introduction of vernacular radio broadcasting since most of the FM were using either Kiswahili or English which was not well understood by many of the local farmers. Key informants reported that most of the farmers in Kakelo were forced to sell their produce at throw away price to middle men during the bumper harvests due to poor prices of farm produce and lack of ready market to their perishable crops. The key informant interviews pointed to the fact that this has been a thing of the past as many farmers reported to be listening to the radio program that furnishes them with the information on local markets and of the surroundings, a sentiment shared by one of the respondents during the interview as follows:

“Since we grow potatoes for both subsistence and sale, many a times we find ourselves marketing our crops through middle men. We therefore end up selling at lower prices than the market would permit, and this is because we are not aware of what actual market prices are. But since we started listening to Radio Nam Lolwe agribusiness program, we often get actual prices of these crops and even where to sell them. This has really improved my production”.

iv. Ripode Mag Kor Lwasi (*Weather Reports*)

The study found that these were updates on the kind of weather to expect in the next one week. The findings of the study also indicated that through agribusiness program, farmers were being sensitized on what and when to plant in different seasons.

v. Weche Manyien (*Bulletin Segment*)

This segment provided farmers with current Agribusiness news, sensitizing them on what activities that take place in various areas i.e. informing farmers on the newly launched herbicide, fertilizer in the market or factors that would hinder/boost productivity.

vi. Penj (*Quiz Session*)

It was also learnt that there were always quiz after every session and prizes in form of farm inputs were given to those who won the quiz. This was found to be one of the best ways to encourage farmers to try applying the farm information they receive from radio since they would

be able to answer those questions better if they put them in practice. This segment was also found to provide a platform for feedback sessions where farmers could make queries on what was discussed.

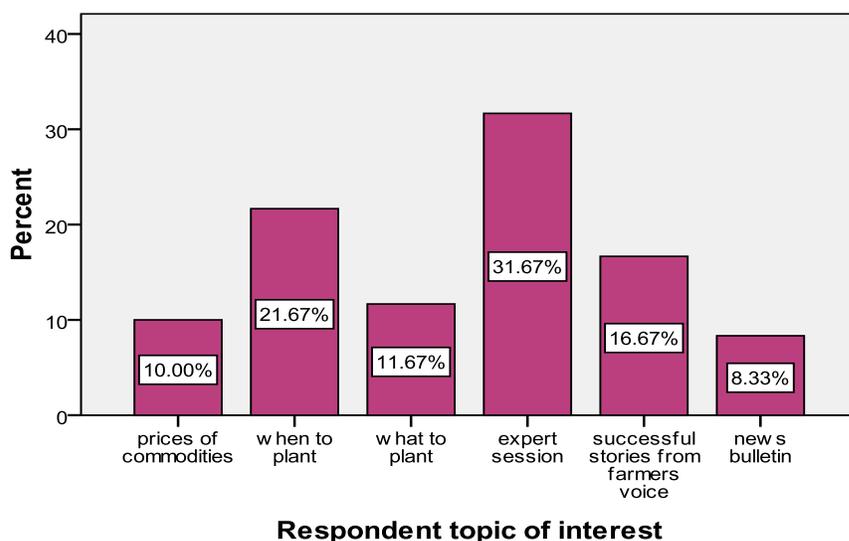
4.3.2 Respondents' Agricultural Topics of Interests

When the respondents were asked to indicate those topics they found interesting from the agricultural program, the study found that 21.7% of them preferred listening to discussions on when to plant. These were updates on the kind of weather to expect before and during planting seasons. About 11% of respondents indicated that they preferred listening to topics on what to plant i.e. topics explaining types of certified seeds to be planted and kinds of soil that suit them.

The study also found that 31.7% of the respondents preferred listening to expert session because they found the session exhaustive and was enhancing their understanding in various topics discussed. Notably, 16.7% preferred listening to farmers' voice, while 8.3% preferred listening to bulletin news with 10% of the respondents preferred listening to prices of farm commodities. Those who preferred farmers' voice session reported that the successful stories from other farmers who had experienced the results of farm radio content found such stories relevant to their problems and solutions that could be similar to what they experience. For those who liked bulletin segment gave their reasons as to being able to familiarize themselves with what was happening in their surroundings in terms of agricultural production. They were also able to access agricultural policies, the availability of farm inputs or an outbreak of crop or animal diseases. Agricultural radio programs provide market price on regular basis, and Nam Lolwe FM was found not to be an exception. The respondents who preferred market reports noted that market prices acted as signals to them by indicating how best they could allocate lands among crops at planting time.

However, the study also revealed that a farmer could be interested in several segments. These topics were therefore found to be relevant to the needs of the audiences, an indication that the FM had been playing a major role in improving farmers' production by disseminating right and relevant agricultural information.

Figure 4.5: Respondents' Agricultural Topics of interest



4.3.3 Messages Learnt from the Agricultural Topics

In finding out the kind of messages the respondents had learnt from the agricultural topics aired on radio, the respondents were first asked if they had ever learnt anything from those topics, and there was a 100% response from them mentioning that they had learnt several issues from the agricultural program aired by the radio station as shown in table 4.4 below.

Table 4.4: Messages Learnt from the Topics on Agricultural Program

Messages Learnt from various Agricultural Topics		Responses	
		Number	Percent
Messages on Improved farming ³	Messages on crop inputs	53	26.8%
	Messages on weather reporting	22	11.1%
	Messages on soil types	10	5.1%
	Messages on marketing	16	8.1%
	Messages on animal feeds	20	10.1%
	Messages on animals diseases	32	16.2%
	Messages on animals fertility	45	22.7%
Total		198	100.0%

The result findings above showed that 26.8% of respondents mentioned that they had learnt several messages on use of farm inputs such as fertilizers and certified seeds, followed closely by nearly 23% who mentioned that they had learnt issues on animals' fertility. About 16% of the respondents indicated that they had learnt messages on animals' disease control, while

about 11% showed that they had learnt on weather reports. Those who showed that they had learnt on improved animals' feeds formed 10%; whereas about 8% of them mentioned that they had managed to know from the FM prices of their farm produce in time and even where to market them, with only 5.1% of the respondents indicating that they had learnt issues on types of soils, and kind of seeds as well as fertilizers that could match their soil types.

The study therefore found out that these radio farm contents were very relevant with the needs of Kakelo farmers, an indication that the FM has been playing a major role in improving farmers' production by reaching them with the right and relevant information using the language they can understand best.

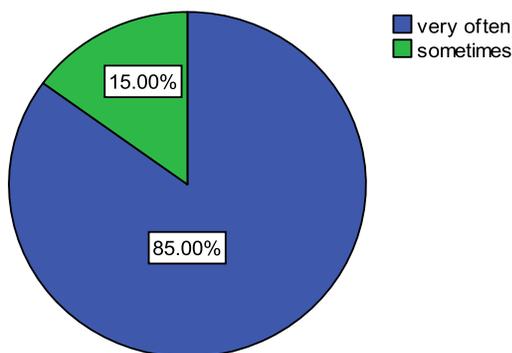
4.4 Households' Level of Access to Agricultural Program

The second objective of this study was: "To find out the level of access of households to agricultural program". Its indicators included: Frequency of listenership; Access to other vernacular radio stations; Reasons for using other vernacular radio stations in accessing farm program; Access to other sources of farm information; and continuous use of other sources of farm information.

4.4.1 Respondents' Frequency in Tuning the FM

Figure 4.6 below shows that 85% of respondents listened to Radio Nam Lolwe very often, while only 15% listened to the FM sometimes when they got time or when their favorite topics were being discussed. This means that farmers from Kakelo Location often listen to Nam Lolwe FM in accessing farm information.

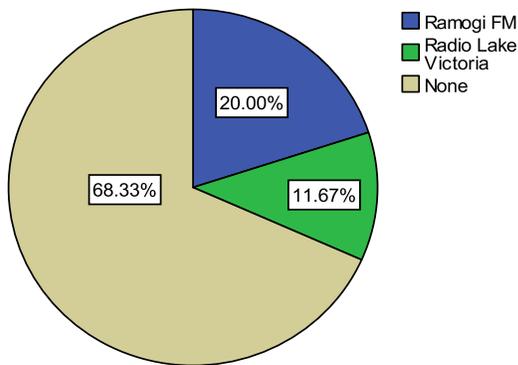
Figure 4.6: Frequency in tuning FM



4.4.2 Respondents' Access to Other Vernacular Radio Stations

The study also sought to find out if respondents listened to other vernacular radio stations to access farm information. A good number of farmers of about (68%) revealed that they do not listen to any other radio station to access farm information but rather prefer listening to Nam Lolwe FM. However, 20% of the respondents mentioned that they listened to Ramogi FM, while only 11.7% of respondents use Radio Lake Victoria to access agricultural information. This shows that the station has grown to become one of the most preferred Luo Radio station for provision of agricultural information to its listeners.

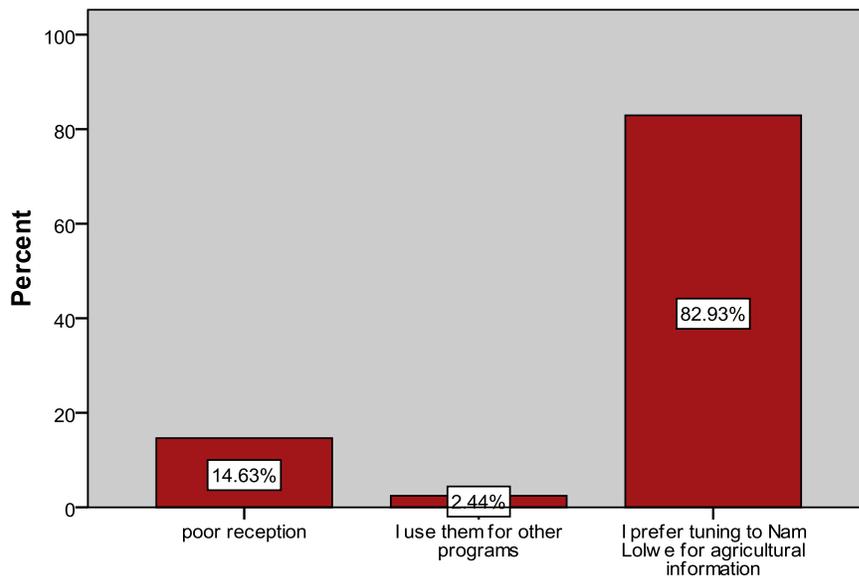
Figure 4.7: Access to Other Vernacular radio stations



4.4.3 Respondents' Reasons for using or not using Other Vernacular Radio Stations

When the researcher probed further reasons behind respondents' decision, the study found that nearly 15% of them indicated that some areas where they live had poor reception, a small percentage of the respondents (2.4%) mentioned they use other vernacular radio stations to listen to other programs other than farm program, while about 83% of the respondents indicated that they preferred using Nam Lolwe to access farm information as depicted on figure 4.8 below. The key informant interviews pointed out that Radio Nam Lolwe offers the best agribusiness program which targets farmers with an objective of addressing farming as avenue of wealth creation as opposed to business for the poor, a notion that has been held by many.

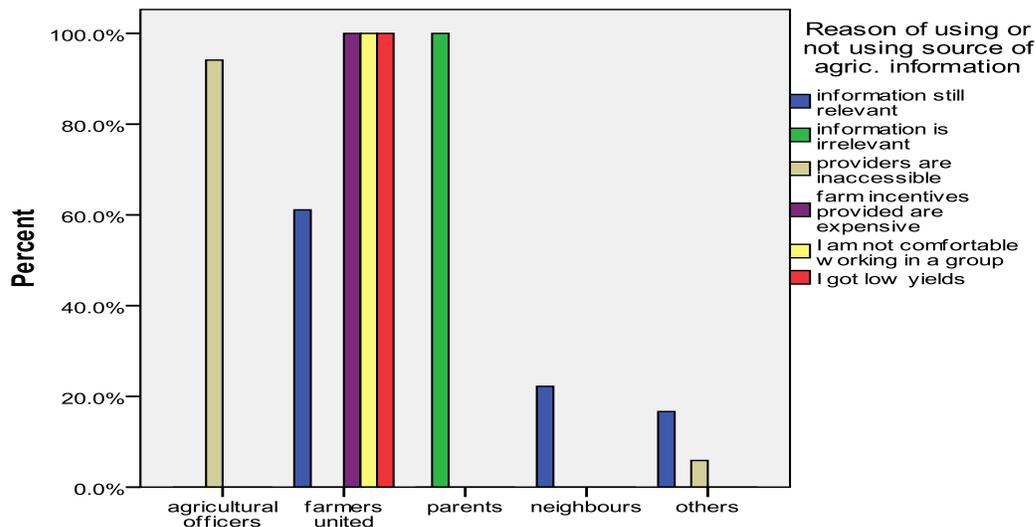
Figure 4.8: Reasons for using other radio stations



4.4.4 Respondents' Continuous Use of other Sources of Farm Information

In pursuit of finding out the respondents' continuous use of other sources of farm information, the respondents were first asked to mention other sources of farm information they were using before the introduction of vernacular broadcasting, and the study established that there were different sources of information used by households in accessing farm information. The study found out that 26.7% of the respondents were using agricultural officers; about 53% indicated that they had been using Farmers United a Non-Governmental Organization working with local farmers, while those who mentioned having been using skills learnt from their parents, neighbors, and other NGOs formed 6.7% each.

Figure 4.9: Reasons for Usage and No-usage of other sources of farm information



When the respondents were asked if they were still using these sources, figure 4.9 above depicts the results as follows: There was none continuation use of Agricultural Officers. According to Hawkins and Ban (1998: page 1), agricultural extension service is an essential tool through which the country can achieve agricultural productivity. In Kenya, extension services are scarce and do not reach many rural farmers due to the demand-driven policy. This was in agreement with the study findings in Kakelo Location which showed that the extension officers had become accessible to only those farmers who could afford to invite them to their farms, while majority of farmers were found to be relying on radio to access their service. This could be attributed to the fact that the government policy requires officers to visit farmers on demand; also the cost of facilitating their visit was to be expensive to farmers. This has discouraged many farmers from accessing extension services.

For those who were using Framers united NGO, about 65% were found to be still working with them because the information was still relevant to them. However, 48.8% of these respondents stopped working with the NGO either because farmers could not afford the cost of their farm inputs and some farmers were not comfortable working in groups, a concept required by the NGO. The study also found that those respondents who were using information they learnt from their parents had discontinued the practice. This was because the information was entirely based on old farming methods hence was irrelevant to them. Those respondents, who were getting farm

information from their neighbors (17.6%), were found to be still using them. This was because such information from their neighbors was still relevant to them. This percentage of respondents represented those farmers who would wish to work with the Farmers United NGO but was either not comfortable working in groups or could not afford cost of farm inputs, and so they were learning from their neighbors who were more cosmopolitan in accessing new farming ideas from other sources.

4.5 Farmers' Perception on Agricultural Program

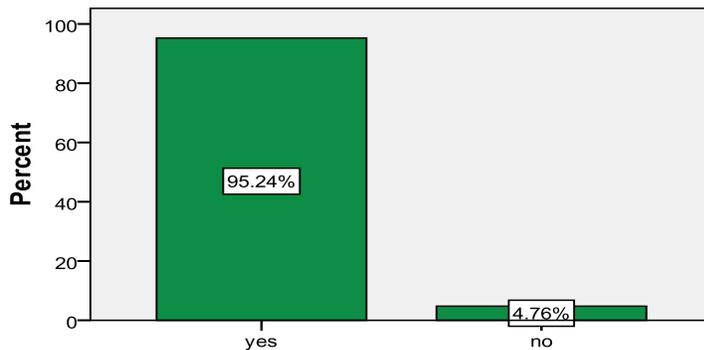
The third objective of this study was: "To determine farmers' perception of the content of the agricultural program aired by Radio Nam Lolwe". However it was difficult to measure the perception of farmers, the following indicators were used to measure their overall opinion on farm information: Satisfaction with farm inputs; Feedback satisfaction; and Confidence with quality of farm content.

4.5.1 Respondent's Feedback Satisfaction

In an attempt to find out the respondents' feedback satisfaction, they were first asked if they had ever given any feedback to the station, and it was found 65% of the respondents indicated that they had never given any feedback. The reasons for this could be varied; it was possible that audiences were just passive and were only taking in anything they heard without questions. It was also possible that the cost for contacting radio station was high and only a few listeners could afford and attempt to do so. The study also found that those contacted radio (35%) to give their feedback only did so when they had motivating factors, especially during the quiz session to win either prizes or products on promotions. There is need therefore for radio stations to create an environment for feedback from their audiences as a way of keeping in touch with their preferences.

The researcher also sought to find out if those who gave feedback were satisfied with what they gave out and the results were measured in a dichotomous (binary) choice of "Yes" or "No" type indicating the farmers' feedback satisfaction or dissatisfaction respectively as shown in figure 4.10 below. A good number of them (95.2%) mentioned that they got satisfied with the feedback they received. This is an indication that radio Nam Lolwe is on record to ensure that all its agricultural topics are well received and if need be were adopted.

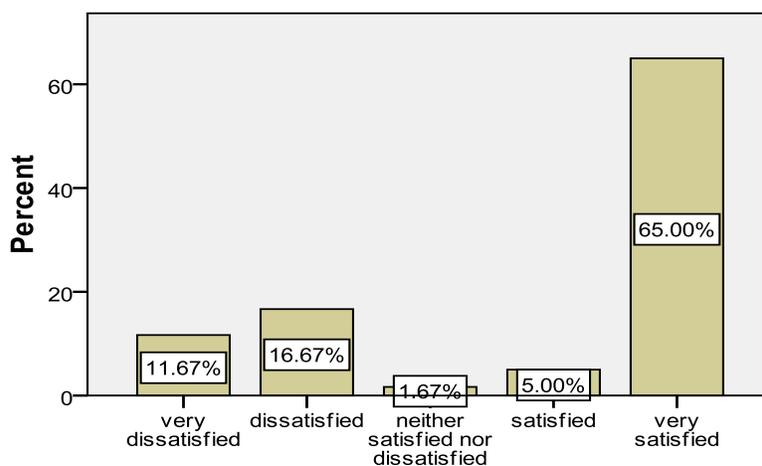
Figure 4.10: Feedback satisfaction



4.5.2 Respondents' satisfaction on What to Plant

The researcher also sought to find out if the respondents were satisfied with the farm information on what to plant. This included types of certified seeds to be planted and types of soil which match such seeds. The information also involved where farmers could find such quality seeds and where to buy them. The study found out that majority of the respondents (65%) very satisfied with information on what to plant. Notably, a total of 28.4% of the respondents were dissatisfied with the topics on what to plant as shown in figure 4.11 below. This group of respondents mentioned that a times they experienced conflicting prices of certified seeds as presented on radio and the actual prices in the markets. There were also issues of planting wrong seeds on un-tested soils leading to low yields.

Figure 4.11 Respondent's Satisfaction on what to Plant



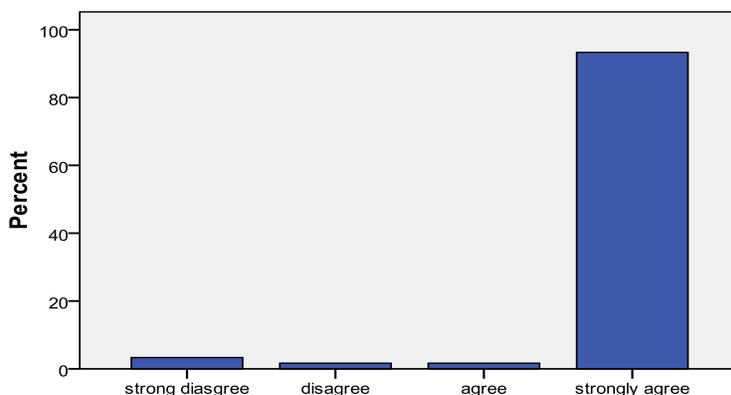
The study also found out that many soils had not been tested and therefore farmers do not know what types of seeds matched their lands. For instance, this was reported by one of the respondents:

“The reason why I cannot have good harvest even after using the farm radio content is that we just buy the seeds we learn from radio and plant without knowing if they really match our soil types. Most of the seeds we get normally are of sub-standard quality. Therefore we would request if radio could organize with these companies and avail their seeds locally. The FM can also facilitate soil testing process by taking the sample from our plot to the recognized institutions”.

4.5.3 Respondents’ Confidence with Quality of the Radio Farm Content

The study also sought to find out if respondents were confident with the quality of the farm content presented by Radio Nam Lolwe. In an attempt to find this, the results in figure 4.12 below depicted that majority of the respondents (93.3%) strongly agreed that they were very confident with the quality of the farm content presented on Radio Nam Lolwe. The rest of the respondents formed only less than 10%. This was an indication that farmers trusted the kind of farm information they received from Radio Nam Lolwe and that could practice it on their farms. These findings were in agreement with the Diffusion of Innovation model which emphasizes on the perceived characteristics of innovation as having relative advantage, being compatible with past experience, can be experimented with the results being visible. All these will affect the level of adoption of an innovation.

Figure 4.12 Respondents’ Agreement with Quality of Farm Content

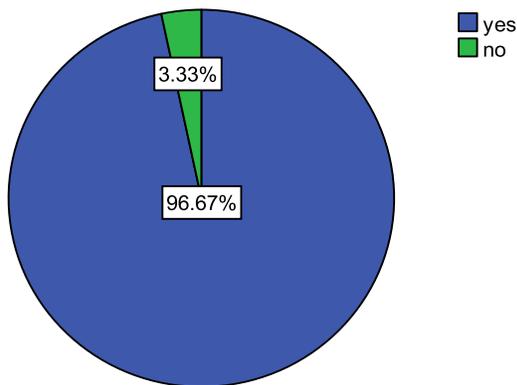


4.6 Respondents Level of Adoption

The fourth objective of this study was: “To examine the level of adoption of the agricultural information received”. Its indicators included: Factors affecting level of adoption; Application of farm content; Inputs and practices adopted by the respondents; Benefits obtained from practicing farm information; Continuous use of farm practices, Reasons for not applying farm information on farms; and Reasons for discontinuation.

When respondents were asked if they had ever applied the information received from radio, a good number of them (96.7%) mentioned that they had been applying the information on their farms, while only 3.3% said they had never applied as shown in figure 4.13 below.

Figure 4.13: If Respondents had been Applying Farm Information



4.6.1 Various Farm Inputs and practices Adopted by the Respondents

Table 4.5 below shows the responses of farmers interviewed on such farm inputs and practices they applied on their farms. The results indicated that they averagely used farm inputs like fertilizers and certified seeds; they also practiced animal disease control as well using improved animal feeds. The use of these farm incentives on both crops and animals was an indication that farmers did apply the farm messages they received on radio to improve their production.

Table 4.5: Farm Inputs and Practices Adopted by the Respondents

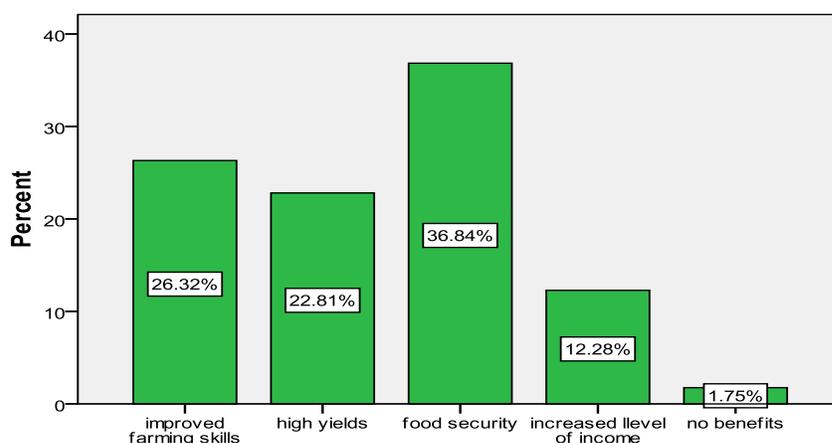
		Responses	
		Number	Percent
farm practices and inputs ^a	If respondents use fertilizers on crops	58	26.7%
	If respondent use certified seeds	54	24.9%
	If respondent practice animal disease control	58	26.7%
	If respondent feeds animals on improved feeds	47	21.7%
Total		217	100.0%

a. Dichotomy group tabulated at value 1.

4.6.2 Benefits Respondents Obtained from Applying Farm Information

The study also examined if there were some benefits respondents had been getting after applying the improved farming practices from radio. Figure 4.14 below confirmed the expectation of the this study by indicating that majority of farmers interviewed (36.8%) had experienced increased food security, with 26.3% of them mentioning that they had improved their farming skills, while 12.3% indicated that they the farm information from radio had enabled them increase their level of income. This could be attributed to the high harvest farmers had been experiencing since they started using radio farm information.

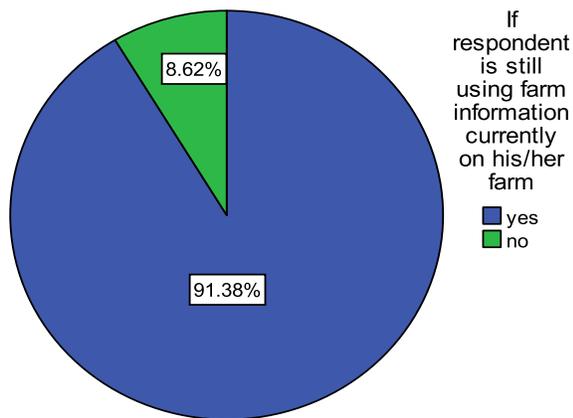
Figure 4.14: Benefits obtained



4.6.3 Predicting the Continuous Use of Farm new ideas

The study also revealed that out of those respondents interviewed, a majority of them (91.4%) mentioned that they were still continuing applying the farm information they obtained from radio on their farms, while only a small percent (8.62%) mentioned that they stopped using the information. This high percentage could be attributed to the various benefits that farmers got after applying the farm radio content on their farms.

Figure 4.15: Continuous use of farm information



4.6.4 Reasons why Respondents had not Applied Information on their Farms

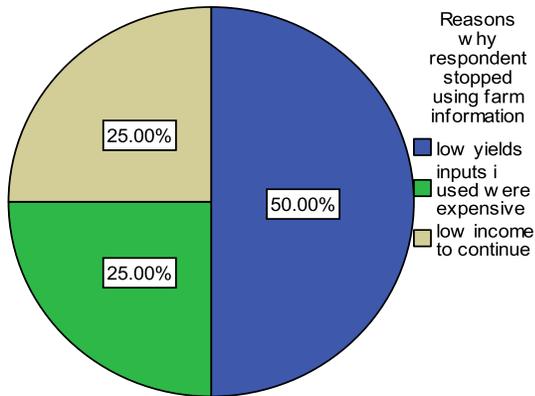
The study also sought to find out why respondents had not been applying radio farm information on their farms and 1.7% of those interviewed mentioned that information was not user friendly, while another 1.7% of the respondents indicated that they preferred using their own ideas. This was the group who were found to be resistant to change. As it was stated earlier in the literature review, negative attitude to change affects the level of adoption of an innovation and hence leads to either rejection or discontinuation.

4.6.5 Reasons for Discontinuation

Although discontinuance decision is pegged on several factors, this study categorized the factor into two broad categories namely; technical and socio-economic factors. Discontinuous decision is as a result of those characteristics within the technology itself and the socio-economic context in which adopting takes place (Miller and Mariola, 2009). According to them, when the technical problems associated with use of the technology are not addressed, there would be a high possibility for decision among adopters.

Therefore the study found that out of the respondents interviewed, a half of them (50%) mentioned that they stopped using the radio farm information after adoption because they had low yields. A quarter (25%) of them indicated that they stopped because the farm inputs they used were quite expensive, while the other quarter (25%) also mentioned that because of low income to buy farm inputs, they could not continue using improved farming practices.

Figure 4.16: Reasons for discontinuation



CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

In this chapter, the summary of findings from the study has been presented followed by conclusions that led to study's recommendations.

5.1 Objectives of the Study

This study was anchored on four objectives:

- a) To identify the topics on agricultural radio program presented by Radio Nam Lolwe
- b) To find out the level of access of households to the agricultural radio program
- c) To determine farmers' perception of the content of the agricultural program aired by the FM
- d) To examine the level of adoption of the agricultural information received

The study was interested in establishing the extent to which radio broadcasting had improved farm production in Kakelo Location. The following is the summary of the findings of the study;

5.1.1 Topics Discussed on Agricultural Radio Program

The study revealed that Radio Nam Lolwe has six segments in which agricultural program are discussed and these included: Farmers' Voice; Market Reports; Weather Reports; Expert Session; Bulletin and the Quiz session. These topics were found to be relevant to the needs of the audiences, an indication that the FM had been playing a major role in improving farmers' production by disseminating right and relevant agricultural information. This was confirmed with a 100% response in affirmative from the farmers that they had learnt agricultural messages on use of farm inputs like fertilizers and certified seeds, issues on animals' fertility, animal's disease control, weather reports etc. Kizilan (2006) and Kiplang'at (1999) posit that dissemination of timely and accurate agricultural information to the farming communities is critical in the farm productivity since information avails opportunities to local farmers and hence lessening their vulnerability. Radio Nam Lolwe therefore offers the best platform in allowing farmers in Kakelo Location to participate in their economies and development by accessing agricultural information that can enable them improve their farm productivity.

5.1.2 Level of Household Access to Agricultural Radio Program

The study sought to find out the level of household access to farm program which was measured by asking respondents if they had an easy access to radio. This was because farmers are an easy audience to reach if they have access to radios. There was a 100% response in affirmative with a majority forming 85% mentioning that they listened to the FM very often, with only 15% of respondents listening to the FM sometimes when they get time or when their favorite topics are discussed. This was a positive indication that majority of farmers in Kakelo Location often listened to Nam Lolwe FM in accessing farm information.

The researcher also sought to find out if respondents were listening to other vernacular radio stations to access farm information, a good number of farmers (68.33%) revealed that they did not listen to any other radio station to access farm information but rather preferred Nam Lolwe FM. However, 20.0% of the respondents mentioned listening to Ramogi FM, while 11.7% listened to Radio Lake Victoria to access agricultural information. These respondents reported that these other vernacular radio stations had poor reception in the area and that they only preferred these radio stations in accessing other programs and not the agricultural one.

The study also sought to establish the different sources of information farmers used to access farm information. The results showed that 26.7% of them mentioned agricultural officers, 53.3% indicated NGO - Farmers United, while those who mentioned parents, neighbors, and other NGOs forms 6.7% each. When they were asked if they were still using these sources to access farm information, none of those who were using parental teachings were found to be still using them. This was attributed to the fact that most of such teachings were old methods of farming and hence became irrelevant to the farmer.

For those who were seeking their neighbors and friends advises on farming, 17.6% of them still find the source relevant, and this was because such farmers try to share with their neighbors especially those working with Farmers United. Out of those respondents who were seeking agricultural officers on farm information, none of them were found to be still accessing them. This was attributed to the fact that these officers have become inaccessible due to government policy requiring them to visit farmers on request.

Finally, those respondents who mentioned that they were working with the Farmers United, an NGO working with local farmers, almost a third of them (63%) indicated that they were still using the NGO, while 47% of them mentioned that they stopped working with the NGO. This was because majority of these respondents mentioned that they were not comfortable working in groups, the cost of farm inputs the NGO provided were also expensive, or some of them got low yields after working with it.

5.1.3 Perception of Household towards Agricultural Radio Program

When farmers asked on their perception on topics about what types of seeds to be planted, 65.7% of respondents were very satisfied with only 5% saying satisfied, while 16.7% and 11.7% responded dissatisfied and strongly dissatisfied respectively. Farmers also were asked their opinion on topics about when to plant and majority (85%) responded very satisfied. This was an indication that farmers are equipped with weather reports and planting seasons. On topics about where to market farm produce, a good number of respondents (90%) mentioned very satisfied. Therefore, information on market price of farm commodities aired by the FM had maximized farm productivity among farmers in Kakelo Location by bridging the gap between what farmers estimated as the prices to be in the market and what they actually were. By knowing the true prices, it meant that they would reap an economic advantage by allocating their farm resources differently and hence improving their productivity.

Farmers' reaction towards radio farm topics was found to be generally positive. However, only a small percent (8%) of farmers felt dissatisfied with the information on types of seeds to be planted. This could be explained by the fact that many soils had not been tested and therefore farmers did not know the type of seeds that could match their soils. Also many a times farmers were duped by being sold seeds of low standards that later lead to low yields.

The response was also measured by asking respondents their perception on radio as a cost efficient access of agricultural information, and majority of respondents (98.3%) strongly agreed with the statement. Therefore the perceived farmers' attribute of agricultural information in this study was associated with a continuance behavior of applying the information on the farms.

5.1.4 Level of Adoption of the Agricultural Radio Program

Acceptance of change and willingness to take risk by trying out new ideas on farming methods was shown to have a direct relationship with the respondent's level of income and education, as well as quality of farm content aired on radio. In terms of level of income, the study revealed that the more the avenues a household had access to, the higher chances of them buying farm inputs and hence ability of improving farm productivity. Income in that case was used to refer to the on-farming revenues accrued from the sale of farm produce as well as those obtained from other activities.

The level of education of respondents was also found to influence decision making regarding use and adoption of farm information from radio broadcasts. The study found that majority of farmers had attained least primary education that could enable them interpret new ideas of farming practices. Past studies found that population with low level of education tends to be less receptive to new ideas about farm productivity and those programs that could be useful in reducing risks associated with poor and old farming methods.

The above factors alone however, could not influence accessing and adopting ideas on new farming practices in absolute terms. Instead other factors like size and ownership of land, resistance to change, and quality of the farm content diffused to the farmer are also intervening factors in regard to farm productivity. For instance, the scale of farming which was dictated by the size of land owned by the household was also shown to influence the behavior of farmers towards farm production. Farmers utilizing a large piece of land, either owned or leased would require more farm inputs and would have more output to sell and improve the farm production, whereas farmers with small pieces of land was found to be limited by the activities to be done on the land. Also those who own communal land were also found to be limited to its access, like using it as collateral in accessing loans to improve their production.

The study found out that majority of respondents (96.7%) reported to be applying the information on their farms. This high response was evidenced by the various farm inputs, animal disease control and improved animal feeds farmers mentioned to have been practicing and applying on their farms. This was because 36.8% of respondents reported increased food security; 26.3% improved farming skills; 22.8% high yields while 12.3% reported increased level of income. However, there was only a small percent (3.3) of farmers who mentioned

that they had never applied such information and 8.6% noting that they had stopped using the farm information. Reasons cited for these responses included: information was not user friendly; and some farmers preferred using their own ideas. This group was found to be resistant to change, a concept that was stated earlier in the literature review as one of the negative factors affecting level of adoption of an innovation, leading to either rejection or discontinuation.

Other reasons the study found to be leading to a discontinuous use of farm information among farmers included: experience of low yields after applying the farm radio content, inputs suggested by radio to be used on farm were found to be expensive, low income among farmers preventing them from continuing with the practice.

5.2 Conclusion

The study attempted to establish whether Radio has improved farm production in Kakelo location through its vernacular broadcasting. An important finding was that an overwhelming majority of over 90% of the respondents reported that vernacular broadcasting has tremendously improved their production, and therefore farmers had positive perceptions towards the agricultural programs aired on radio. Reasons cited were mainly agriculturally related and they included: increased agricultural productivity, improved modern farming skills, food security and increased livelihood. However, some of respondents reported that these achievements were not sustainable due to factors such as low level of income, low level of education and farmers' resistant to change.

Through vernacular radio stations, farmers are able to acquire agricultural information on the prices of inputs and output, weather, commodity demand, agronomic practices, among other important information. For radio information to be helpful and to improve the life of the farmer, its content and the language of broadcasting must be relevant to the local situation.

The study further found that the decision to use and adopt new farming practices was determined by level of income and education, and quality of farm content. It was also found that other capital endowment factors like land size and ownership, also affected the adoption of the farm information. The study finally found that even after the use of farm information, there is likelihood that a discontinuation can occur, and this was found to be attributed by socio-economic factors like attitude towards change and low level of income.

Therefore, the major obstacle to improvement in farmer productivity is farmer knowledge and attitude. If only the information were diffused and known farming technology adopted, then all would be well.

5.3 Recommendations

Based on the study findings, it is recommended that:

- a. Radio stations to bring out the extension service by organizing agricultural field days accompanied by experts in various fields of profession to demonstrate practically what they broadcast on radio issues that could be more complex to farmers.
- b. The Government, NGOs and other private sector to invest in projects that aim at linking rural farmers to market, manufactures of farm inputs, and other agricultural information.
- c. Support should also be directed to farmer organization groups such as farm groups, which would play a significant role in farm information adoption. Such groups can also form basis for SACCOs and village banks formation where local farmers can save and borrow funds for improving their production as majority of them lack collateral assets for loans.
- d. Radio stations to design their agricultural programs that match the agricultural microclimates and an extension program of feedback to be incorporated in the production process.

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APPENDIX I

THE ROLE OF VERNACULAR BROADCASTING IN ENHANCING FARM PRODUCTION IN RURAL KENYA: A CASE OF RADIO NAM LOLWE IN KAKELO LOCATION OF HOMA BAY COUNTY

Farmer number _____ Date _____
Sub-location _____
Village _____

Introduction Letter

Dear respondent,

I am a student at the University of Nairobi writing a Project for a Master of Arts Degree in Rural Sociology and Community Development. I am collecting data on the role of Nam Lolwe FM, a vernacular radio station in enhancing farm production among farmers in Kakelo Location. You have been selected to participate in this study. I would be grateful if you could spare some time and answer the questions.

Your identity will be treated with utmost confidentiality and the information provided herein will be used purely for the purpose of this study and no other reason whatsoever.

Yours faithfully,

Risper Odira.

Instructions

1. The questionnaire should be administered to the household head or to the decision maker on the farm practices
2. Tick or fill the appropriate response

1.0 Household characteristics

1.1. Do you have easy access to a radio set? Yes (), No () If no, terminate the interview

1.2. How old are you? 19 and below (), 20-29 (), 30-39 (), 40-49, 50 and above ()

1.3. Gender? Male (), Female ()

1.4. Level of education? Primary (), Secondary (), Tertiary (), No formal Education ()

1.5. Marital Status? Married (), Not married (), widow/widower ()

1.6. What is your house type? Grass thatched and mud walls (), Semi-permanent (), Permanent ()

1.7. What is your occupation? -----

1.8. What are your main sources of income?

- i. -----
- ii. -----
- iii. -----

Type of Crops	Farm Input Used
i.	
ii.	
iii.	
Type of Livestock	
i.	
ii.	
iii.	

1.9. What is your approximate monthly income? 5000 and below (), 5001-10,000 (), 10,001 and above ()

1.11. What is the size of your farm unit(s) in acres? _____

1.12. What crops and livestock do you have on your farm?

2.0. Type of Radio Farm Content Accessed by Household

2.1. Do you listen to vernacular radio programs? Yes (), No ()

2.2. If yes, which programs do you listen to?

- i. -----
- ii. -----
- iii. -----

2.3. Do you tune in to Nam Lolwe FM? Yes (), No ()

2.4. Have you ever listen to Radio farm program aired on Nam Lolwe FM? Yes (), No ()

2.8. If yes, what are those topics on Radio farm program that you found are of your interest?

- i. -----
- ii. -----
- iii. -----

2.7. Have the programs helped you to learn about farming? Yes (), No ()

2.8. If yes, what agricultural messages have you learnt from the programs on?

Crops	Livestock
i.	i.
ii.	ii.
iii.	iii.
iv.	iv.

3.0. Household Access to Vernacular Radio Programs

3.1. How frequent do you tune in to Nam Lolwe FM? (), very often (), sometimes (), rarely (), never ()

3.2. Where do you normally listen to radio programs? Own house (), Neighbor's (), other () specify _____

3.3. Which other vernacular radio stations do you listen to access farm information?

- i. -----
- ii. -----
- iii. -----

3.4. Which farm messages have you been accessing from these other vernacular radio stations?

3.5. From which sources were you obtaining farm information before the introduction of vernacular radio stations? _____

3.6. Are you still using the sources to access farm information? Yes (), No ()

3.7. If yes, why? _____

4.0. Household Perceptions of the Radio Farm Program (Tick the appropriate answer)

4.1. Are you satisfied with the types of topics in the radio farm program aired on Nam Lolwe FM?

Topics on Farm radio Program	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Dissatisfied	Very dissatisfied
What to plant					
When to plant					
What to use to improve farm productivity					
Where and who is buying farm produce					

4.2. Have you ever given any feedback via SMS, E-mail or calling about a topic that was discussed on any agricultural program on Nam Lolwe FM? Yes (), No ()

4.3. If yes, were you satisfied with the information you received after the feedback? Yes (), No ()

4.4. Use a scale below to indicate your opinion on the quality of the farm radio content you receive from FM towards improving your farm productivity

5- Strongly Agree, **4-** Agree, **3-** Indifferent, **2-** Disagree, **1-** Strongly Disagree (make a tick)

Questions	5	4	3	2	1
Radio is a cost efficient access of agricultural information					
I prefer radio Nam Lolwe in accessing farm radio content because it uses my local language					
Radio presenters and the facilitators invited on studio who discuss agricultural program have sound knowledge of the programs they present					
I have confident with the quality of agricultural information I receive from Nam Lolwe FM because they are user friendly and rewarding					
Some of the farm input suggested by the radio farming program are expensive					
The farm radio content we receive from the FM are in contrary to our custom					
I rarely use new ideas or methods to my farm practice even if the information is more rewarding than what I am using					
I prefer radio Nam Lolwe in accessing farm radio content because it reaches its audience through radio talk shows, road shows and radio forums where we exchange our views on farm productivity					
The farm radio content I have received from Nam Lolwe FM has improved my farm productivity					

5.0. Level of Adoption of the Agricultural Information received by Household

5.1. Have you ever tried applying the agricultural information you obtained from the FM? Yes (), No ()

5.2. If no, why didn't you apply the information on your farm?

5.3. If yes, what were the benefits you obtained after using the agricultural information?

5.4. Are you still using the information on your farm currently? Yes (), No ()

5.5. If no, why did you stop using the information?

Thank you.

APPENDIX II

KEY INFORMANT INTERVIEW GUIDE FOR EXTENSION OFFICERS FROM KASIPUL DIVISION

Dear Respondent,

I am a student at the University of Nairobi writing a Project for a Master of Arts Degree in Rural Sociology and Community Development. I am collecting data on the role of Nam Lolwe FM, a vernacular radio station in enhancing farm production among farmers in Kakelo Location. You have been selected to participate in this study. I would be grateful if you could spare some time and answer the questions.

Your identity will be treated with utmost confidentiality and the information provided herein will be used purely for the purpose of this study and no other reason whatsoever.

Yours faithfully,

Risper Odira.

1. Have you ever visited farmers from Kakelo Location in the last 3 months?
2. When was your last visit?
3. What is the procedure of your visit, do they invite you or you go on your own?
4. Who facilitates your movement?
5. What are your observed challenges experienced by farmers?
6. Have you ever noticed a new farm idea that has been implemented by farmers which you did not teach?
7. Where do you think they have been getting such additional information from?

8. Do you work in collaboration with any vernacular radio station which broadcasts farming program?
9. What is your view on vernacular radio stations that air agricultural programs targeting local farmers like those of Kakelo Location?

Thank You

APPENDIX III

INTERVIEW GUIDE FOR KEY INFORMANTS -STAFF OF RADIO NAM LOLWE

INTRODUCTION

- Introduction of the Radio Nam Lolwe staff (Producer and Host of the program)
- Position
- Qualification
- Number of year

1. A brief outline or history on how and why the agricultural program was introduced
2. Outline the organizational structure of the program and its objectives
3. Activities of the program
4. When is the agricultural program aired on radio? (Day and time)
5. What is the duration of the program?
6. What are the topical issues on farming that you broadcast?
7. How many times do you have such topics discussed?
8. Is the program a live or recorded?
9. Do you have invited guest speakers for the program?
10. Where do you get these speakers from?
11. Does the program have listener interaction session?
12. Do you receive concerns and feedback from your audience during this session?
13. Do you have other ways of reaching your audience on the ground particularly for this program?
14. From the feedback you get, do you think the information you broadcast on farming program improves their farm productivity?
15. Evidence of success, constraints and failures of the program

Thank You.

APPENDIX IV

OBSERVATION CHECKLIST FOR RESPONDENTS AND HOUSEHOLD ASSETS IN KAKELO LOCATION

OBSERAVTION CHECKLIST	OBSERVATION MADE
House Type	
House possessions (radio set, chair tables etc)	
Livestock (both grade and local type)	
Crops (both food and cash crops)	
Granny and/or sacks with food	
Electricity	
Size of Land	