The Effect of Radio Agricultural Programmes on the Activities of Small Scale Farmers in Kasese District

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Declaration

I, **Mwahulhwa Wilson** hereby declare that this dissertation titled "**Effectiveness of radio agricultural programmes in scaling up farming activities of smallholder farmers in Kasese district"** is my original work and to the best of my knowledge, it has not been submitted in any institution for any academic award.

Signature..... Date: ...28/9/2024.....

MWAHULHWA WILSON

Approval

This is to certify that this dissertation titled "**The Effects of Radio Agricultural Programmes on the Activities of Small Scale Farmers in Kasese District"** has been done under the supervision of the following supervisors and is ready for submission to the graduate school of Bishop Stuart University.



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Dedication

This dissertation is dedicated to my family for their endless financial and moral support during the completion of this dissertation.

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List of Abbreviations

AERP	Agricultural Extension Radio Programmes
FCP	Farmers' Corner Programmes
KGR	Kasese Guide Radio
LTM	Long Term Memory
NAADS	National Agriculture Advisory Services
NAEP	National Agricultural Extension Programs
PM	Primary Memory
SM	Secondary Memory
SSA	Sub-Saharan Africa
SSFs	Small Scale Farmers
STM	Short Term Memory
SWC	Soil and Water Conservation
UBC	Uganda Broadcasting Corporation

Abstract

Radio is a powerful communication tool. Experience with rural radio has shown the potential for agricultural extension to benefit from both the reach and the relevance that local broadcasting can achieve by using participatory communication approaches. The importance of sharing information locally and opening up wider information networks for farmers is explored with reference to the specific example of vernacular radio programmes based on research on soil and water conservation. The study was about the effect of radio agricultural programmes on the activities of small scale farmers in Kasese District. The specific objectives included to; (i) assess the relevance of Agricultural Extension Radio Programmes to small scale farmers; (ii) assess farmers' satisfaction of Agricultural Extension Radio Programmes, (iii) assess the level of implementation of acquired knowledge from Agricultural Extension Radio Programmes, and (iv) to evaluate radio

programme formats preferred by small scale farmers in acquiring knowledge. The study was a descriptive-cross sectional survey employing both quantitative and qualitative approaches to data collection and analysis. Data was captured from a sample of 216 respondents using questionnaire and interview guide. Data was analyzed using SPSS software to generate both descriptive and inferential statistics. The study found out that Agricultural Extension Radio Programmes were pertinent to small scale farmer's activities like pest and disease management, soil and water conservation, organic manure use and application, general management practices, enterprise selection, post-harvest handling and others. Programmes were equally relevant towards animal management activities like breed selection, pasture management and product marketing. The study also found out that farmers were fairly satisfied with Agricultural Extension Radio Programmes due to signal breaks. The study further found out that farmers had implemented the knowledge acquired from Agricultural Extension Radio Programmes; however the level of implementation differed based on activity/practices. The study identified the different radio programme formats preferred by small scale farmers in acquiring knowledge such as; interactive talk shows, programme repeats, evening shows and farmer-centered programs. The study concluded that Radio Agricultural Programmes had an effect on Small Scale Farmers Activities in Kasese District and recommended that Radio extension programmes be prepared and broadcasted in a way that makes them accessible to the target audience. The programs should also be broadcasted in the evenings as from 6.00 pm when farmers have returned from the field.

Key Words: Agricultural Radio Programmes, Effects, Relevancy

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Uganda‘s economy is dependent on agriculture supported by small scale farmers. The sector provides a livelihood for about 80% of Uganda‘s population and employs more than 70% of the rural population (Agwu & Adeniran, 2010). Communicating information on agriculture innovations to farmers has relied on extension services which limits the number of farmers reached. This study seeks to assess the Effect of Radio Agricultural Programmes on the Activities of Small Scale Farmers specific reference to “Farmers’ Corner program” airing on different Radio stations in Kasese District.

This section consists of the background of the study, statement of the problem, research objectives and questions, justification and significance of the study, scope of the study, theoretical review and conceptual framework.

1.2 Background to the study

Globally, mass media are vital tools of communication and have been instrumental in informing the masses about developments taking place across the world (Acker & Jenny, 2011). Traditional mass media channels including radio, television and newspapers continue to be relevant particularly in developing countries where new technology has been slow in taking root.

In Africa, absence of a functional agricultural information delivery system is a major constraint to agricultural development, Sife et al., (2010) identified non-provision of necessary agricultural information as a key factor limiting agricultural development across the continent.

According to Chiou & Tucker, (2011), lack of access to relevant agricultural information by farmers in developing countries cuts across all subsectors of agriculture and different stages of agricultural production process (Aker, 2010). It has been critical for farmers to be informed and educated about improved agricultural practices to enable them increase their productivity and income. Several channels such as extension agents, individuals, farmer- to-farmer contact, print media (newspapers, magazines, newsletters, leaf-lets, pamphlets, and posters) and electronic media (radio, television, film, slides and film strips) have been widely used to disseminate information to farmers (Fu and Akter, 2010). The required amount of information and learning is, however, so vast that only effective use of the information multipliers, the mass media, can provide information at the rates driven by pressure of time, population, geographical constraints, and shortage of trained extension personnel in developing countries.

Radio has been identified as one of the broadcast medium appropriate for rural emancipation programmes because it beats distances, and thus has immediate effect. It has been identified as the only medium of mass communication the rural population is very familiar with (Kameshwari & Kishore, 2011). This is because a radio set is cheap to obtain and is widely owned in the rural areas. This is made possible by the advent of the battery-operated transistorized sets. Furthermore, radio is favored as a medium of communication in rural communities because of the advantages ascribed to it in form of (i) transcending the barriers of illiteracy, and (ii) demanding less intellectual exertion than the print media messages (Kwadwo, & Ayalew, 2011).

In Sub-Saharan Africa, agriculture contributes immensely to household economy, and the sector is expected to grow up to 6% per annum. Agriculture is a valuable source of raw materials for local industries, foreign exchange, and offers employment and income for households, thereby making significant contribution to poverty reduction (Smith, 2014). Despite the role of the sector,

farmers in Sub-Saharan Africa still face severe production constraints resulting from the general lack of extension information. Inappropriate agricultural production methods have brought about negative environmental effects such as deforestation, soil degradation and loss of biological diversity which poses a threat to the regions' food security (Manyozo, 2009). A major source of technology transfer to farmers are state-funded National Agricultural Extension programs.

There still exists a general lack of adequate frontline agricultural extension agents across Sub-Saharan Africa to ensure effective communication of agricultural messages to farmers. This situation has presented problems of insufficient and irregular contact with the farmers. Yet, availability of the right numbers of knowledgeable agricultural extension agents constitutes an important step towards achieving a successful agricultural extension and information delivery system (Manyozo, 2009), and indeed, for increased agricultural production.

Uganda's economy is dependent on agriculture supported by small scale farmers. The sector provides a livelihood for about 80% of Uganda's population and employs more than 70% of the rural population (Manyozo, 2009). In Uganda constraints such as inadequate logistical support and lack of adequate transport, and the limited number of extension agents have made it difficult for frontline extension services to have adequate and regular face-to-face interactions with farmers (FRI, 2011)). The agricultural extension to farmer ratio by the end of 2017 was 1: 2,400; indicating that on the average one extension agent provided technical agricultural services and information to 2,400 farmers as at 2004 (UFAAS, 2014). Extension education has also been criticized for employing ineffective message delivery approaches. As noted by ACODE, (2015), apart from failing to reach most farmers in their remote communities, extension system has also, in general, not achieved much success in communicating effectively with resource-poor farmers.

Given the limits and problems associated with the extension system, certain mass media have showed a potential role in supporting agriculture (Aker, 2010). Salami & Kamara, (2010) noted that government has turned to radio for agricultural communication with the rural poor because of the realization that extension education suffers from lack of adequate personnel and logistics. Localized communication systems, undoubtedly, have presented a strong potential to the development of agriculture at community level. According to Salami & Kamara, (2010), locally based radio stations have been essential in fostering agricultural development. They have expressed a strong capacity to increase agricultural production and rural development.

In Kasese district, Kasese Guide radio in partnership with Kasese District Local Government, Uganda Radio Network, NAADS, Makerere University, Grameen Foundation and Farm Radio International started a Farmers' Corner Radio programme on Kasese Guide Radio (UFAAS, 2014). It was a pilot programme on eight other FM radio stations in Uganda that ended in 2015; but has since then continued to run on this Radio with support from the Production and Marketing Department - Kasese District local government that provides technical backup and other private partners like AgriEvolve that sometimes provide airtime. The effect of this radio program on farming activities in Kasese District remains undocumented.

1.3 Statement of the problem

Kasese District is blessed with a rich natural resource base with favorable climatic conditions and fertile soils for agricultural production (UFAAS, 2014). The district has great potential for the production of many crops with Arabica coffee dominating the mountain slopes and cotton, maize, beans dominating the lower lands. Although over 90% of the population still practice subsistence agriculture, the gap in the agriculture sector is synonymous with famer's lack of adequate information on new effective farming methods and technologies (UFAAS, 2014). This

perhaps explains the persistent low production in the last two decades. In an effort to boost production at household level, government was mandated to use mass media since it covers a wider population within resource limits. Given that a bigger part of the district is still remote with limited power to watch TV programs, local radio stations have been adopted as a means through which agricultural information can reach rural farmers with in time and resource
limits.

One of the agricultural radio extension programs is "Farmers' Corner radio programme" airing on Kasese Guide radio and radio Messiah. The program conveys important information on better management practices, improved seeds and breeds, soil and water conservation, crop prices, markets and marketing, and new technologies with an aim of boosting production at household level (Manyozo, 2009). Although farmers' Corner radio programme has a large listenership and has been acknowledged as a powerful and effective medium to project agriculture information and knowledge; there is still scanty literature on its effect on Small Scale Farmer Activities in Kasese District. This study was conducted to assess the effects of radio agricultural programmes on the activities of small scale farmers in the district.

1.4 Objectives of the study

1.4.1 Main objective:

The overall purpose of this study was to evaluate the influence of this agricultural radio programme on the activities of small scale farmers in Kasese District and propose other remedial measures for boosting agricultural production in the area.

1.4.2 Specific objectives

1. Assess the relevance of Agricultural Extension Radio Programmes to small scale farmers

2. Assess farmers' satisfaction of Agricultural Extension Radio Programmes
3. Assess the level of implementation of acquired knowledge from Agricultural Extension Radio Programmes
4. Evaluate radio programme formats preferred by small scale farmers in acquiring knowledge

1.5 Research Questions

1. How relevant are Agricultural Extension Radio Programmes to the information needs of small scale farmers?
2. How satisfied are the small scale farmers with the contents featured in Agricultural Extension Radio Programmes?
3. How useful is the agricultural content in the Agricultural Extension Radio Programmes in changing farming practices of small scale famers?
4. What are the preferred radio agricultural programme formats by small scale farmers?

1.6 Justification of the study

The agricultural sector of Ugandan has for a long period suffered an information extension gap which has heavily effected production (Manyozo, 2009). The gap in extension information has for the past two decades limited farmer's capacity to apply recommended management practices, adopt improved varieties as well as properly marketing their output (Aker, 2010). Given the remote nature of agriculture producing areas across the country, extending agricultural information at village level has been the most challenging part of the agricultural extension system in terms of resources. Agricultural extension radio programs have been initiated across the country as part of

the mandate to disseminate agricultural information within resource limits (UFAAS, 2014). Although there are many agricultural extension programs on many radio stations across the country, little is known on how they influence smallholder farmer activities across the country.

This research is motivated by the lack of documented evidence on the influence of these agricultural radio extension programmes on production. A few surveys or perhaps none have been done to document the phenomena and come up with scientific evidence. Given that the researcher is trained as and has experience as a Radio Extension officer; who has been hosting the Farmers' Corner programme on Kasese Guide Radio for the last four years, carrying out such survey is very paramount for him to compare the actual listenership with the impact of the program at grass root level. This is because there are many programmes aired at the stations but these stations find it very expensive to commission research on the impact of their programmes.

1.7 Significance of the study

The findings of the study may add to the body of knowledge in the area of radio usage in agricultural information dissemination.

The findings may also assist agricultural extension agents and radio stations to design relevant agricultural programmes and air the same at appropriate times to meet information needs of farmers.

The findings of this study may also inform the Agricultural radio programme producers on the influence of their programmes on farmers and design better approaches to disseminating agricultural information. It is expected that this will assist them in the packaging of agriculture content for the radio.

This study may also provide the basis upon which to review programme production policies in terms of allocation of resources towards effective programmes that involve the other stake holders. The findings may be a reference point for stakeholders and content providers of agricultural information to strengthen their partnerships with the radio station.

The research findings may also be a very important source of information to Agricultural Extension Workers, local council leaders and development partners in Kasese District.

1.8 Scope of the study

The scope of the study was categorized into content, geographical and time as discussed below;-

1.8.1 Content scope

This study; assessed the relevance of Agricultural Extension Radio Programmes to small scale farmers, assessed farmers' satisfaction of Agricultural Extension Radio Programmes, assessed the level of implementation of acquired knowledge from Agricultural Extension Radio Programmes, and evaluated radio programme formats preferred by small scale farmers in acquiring knowledge.

1.8.2 Geographical scope

The study was conducted across Radio listener groups of agricultural extension programs aired on Kasese Guide Radio (KGR), UBC Ngeya FM and Radio Messiah in Kasese municipality, Kasese district. Kasese District is located along the equator. It is bordered by Bunyangabu District to the north, Kamwenge District to the east, Rubirizi District to the south, and the Democratic Republic of Congo to the west. The district headquarters at Kasese are located approximately 359 kilometres (223 mi), by road, west of Kampala, Uganda's capital and

largest city.

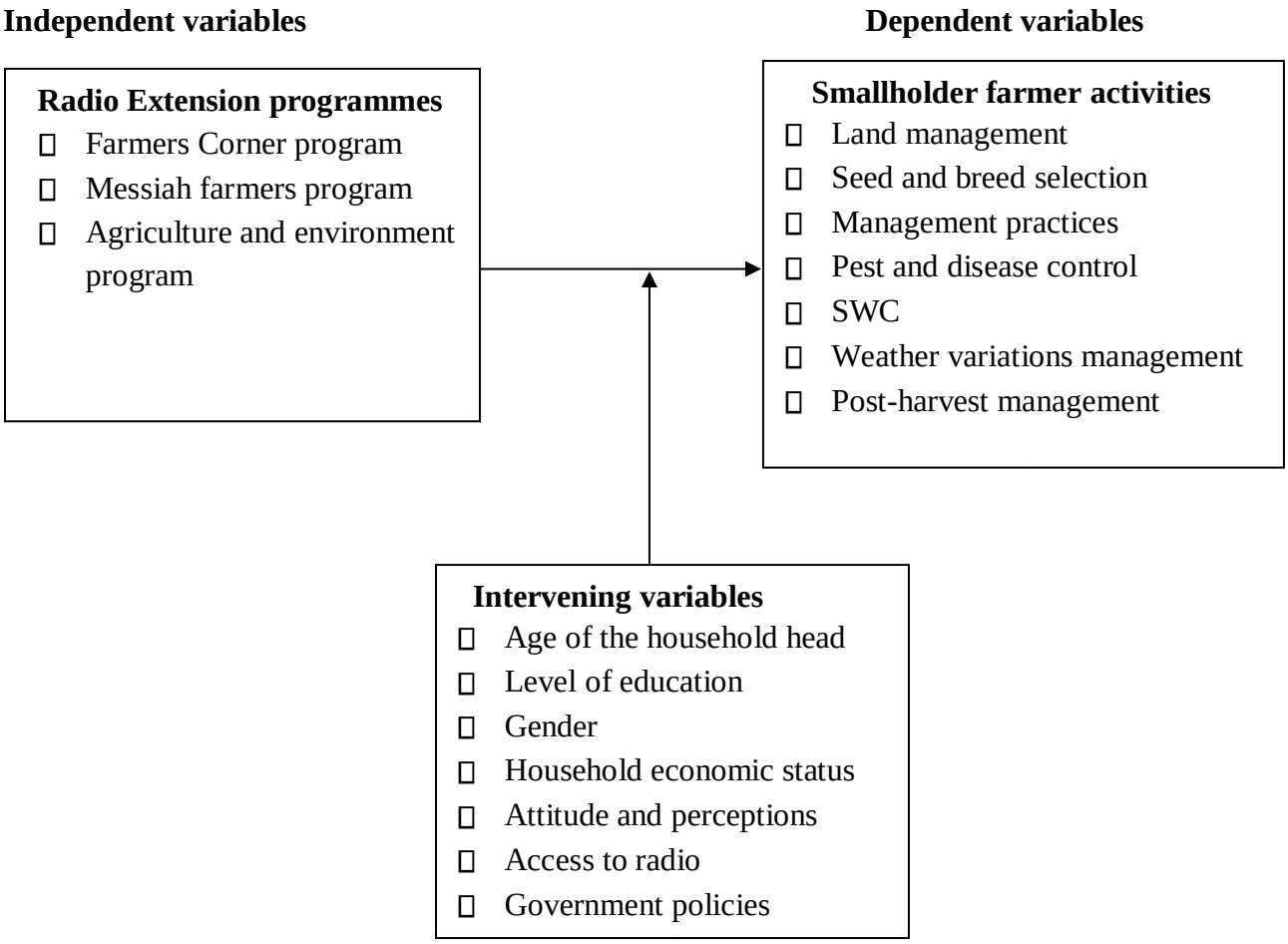
With an estimated population of 947,800 (Population and housing census 2016), agriculture is the mainstay of the economy of the district characterized by subsistence production. The district is blessed with a rich natural resource base of favorable climatic conditions and fertile soils for agricultural production. Although over 90% of the population still practice subsistence agriculture, the gap in the district agriculture sector is synonymous with famer's lack of adequate information on new effective farming methods and technologies.

1.8.3 Time scope

This study was conducted for a period of 9 months from October 2018 to June 2019 and it evaluated literature for a period of 8 years (2010 – 18). It was within this time frame that radio and TV programs had been promoted as part of the tools to disseminate agricultural extension information in remote areas across the country.

1.9 Conceptual framework

The framework demonstrated a set of relationships among background variables, independent variables and dependent variables. In this context, background and independent variables influenced dependent variables. The study looked at agricultural radio extension programmes as the independent variable and smallholder farmer agricultural activities as the dependent variable.



Source: Researcher 2019

Figure 1: A conceptual frame work describing the relationship between radio extension programmes and Smallholder farmer activities.

From figure 1 above, local radio extension programmes had an impact on farming activities; land management, seed and breed selection, pest and disease control, Soil and Water Conservation, weather variations adoption and post-harvest management. All these activities boost production through acquired knowledge and skills. Access and listenership to agricultural extension radio programmes is influenced by household characteristics like age of the household head, level of education, gender, economic status, attitude and perceptions and ownership of hand radio.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter presented literature reviews and describes relevant concepts that guided the assumptions of the research project. Literature was reviewed as; relevance of Agricultural Extension Radio Programmes to small scale farmers; farmers' satisfaction of Agricultural Extension Radio Programmes, level of implementation of acquired knowledge from Agricultural Extension Radio Programmes and radio programme formats preferred by small scale farmers in acquiring knowledge.

2.2 Theoretical frame work

The study was hinged on three major theories that is; Agenda Setting Theory, Cognitive Response Theory and Diffusion Theory.

2.2.1 Agenda setting theory

This study draws on the agenda setting media effects theory. According to the agenda setting theory, media often set the agenda for the public by highlighting what they deem important by telling people what to think about. This research project applies agenda setting theory to show how the selection of topics and packaging of agricultural content impacts on farmers' uptake of agriculture innovations.

Agenda setting has to do with media content but more than that McCombs and Shaw (UFAAS, 2014) state that mass media have the ability to transfer the salience of items on their news agendas to the public agenda. Another perspective from Bowen, (2010) is of the opinion that agenda setting involves the consideration of three related agendas; the media agenda, the public

agenda, and the policy Agenda. The author further quotes scholars of agenda setting (Xu et al., 2013) who stated that agenda setting is a process whereby the news media lead the public in assigning relative importance to various public issues.

Radio formats are designed to reinforce massages in order to bring change among farmers to adopt new farming techniques for improved production and productivity. Radio producers do this through programme planning which involves the selection of topics, presentation of the topics on radio that may be in form of interviews from selected experts, farmers or live talk shows (Mwakaje, 2010).

2.2.2 The Cognitive Response Theory

The dominant contemporary views of memory and studies in the area are derived largely from the cognitive information processing models. The information processing approach holds a strong view that human beings are very much processors of information (Materu & Diyamett, 2010). According to Aker, (2010), "cognitive information processing models could provide a useful theoretical basis for research into retention and comprehension of broadcast news". Mtega & Msungu, (2013) gave similar explanations about the role of the cognitive response theory in information processing and attitude change.

The cognitive response theory seeks to explain the relationship between message learning and persuasion. It provides explanations also to the cognitive processes that are responsible for information uptake. This approach explains that the extent of yielding to persuasive messages or information by the receiver has a marked relationship to the cognitive responses to the message (Olaleye et al., 2009). According to Ojebode, (2008), the approach offers a useful theoretical basis for understanding that attitude change is influenced by the cognitive responses that are provided by individuals when they are exposed to communication.

Information processing in the cognitive response model is explained as processes or subprocesses that are brought into play when people act on information (Sife et al., 2010). The model outlines three sub-processes of information processing: encoding, storage and retrieval (Abubakar & Ango, 2009). Ojebode, (2008), as cited in Chhachhar, et al., (2012), distinguished two separate stores that they called primary memory (PM) and secondary memory (SM). Stimuli items first enter the PM before they strive to be maintained through rehearsal. If they are not rehearsed, they are soon forgotten. If an item remains in the PM, it may eventually enter the more permanent SM. In the SM, items are retained in memory, irrespective of whether the person rehearses them or not. The SM is known to have more storage capacity than the PM (Chhachhar, et al., 2012).

Social psychologists have identified the processes involved in message learning, storage and retrieval of information as the interplay of the working of the short term memory (STM), long term memory (LTM) and working memory (WM) (Churi et al., 2012). In the STM, information from a persons' experience or from the environment is first interpreted and stored. However, because the STM has a limited capacity, the information is often forgotten within half a minute, unless it is acted upon almost immediately (Heeks & Molla, 2009). The WM, like the STM has a limited capacity. In the WM, information from the STM and LTM are often combined (Chhachhar, et al., 2012). The final memory store is the long-term memory (LTM), which is assumed to have a limitless capacity. In the LTM, information is represented in a meaningful manner. The LTM then keeps this information until the time comes when the information is to be retrieved. Information, in most cases, is lost in the LTM when there has been interference from other new information from the environment which is held in the STM (Jung, 2013).

Summary of the theory

Inferring from the above discussion, memory is a composite of the outcome of encoding, storage and recall. Even though the cognitive response theory draws its strength from mostly television experiments, its basic tenets have a relationship with memory recall also from radio broadcasts. How much of a radio message a listener can recall will depend upon the amount of the message the listener is able to encode, store and retrieve. A significant factor in this case will have to do with how much resources the message recipient has, or is willing, to allocate for the message (Jung, 2013).

The relevance of cognitive response to radio broadcasting is particularly drawn from Jung, 92013) view that the selection process of information is guided and regulated by two types of stimuli: (I) information that is relevant to the goals and needs of the individual and (ii) information that represents the change or an unexpected occurrence in the environment.

2.2.3 The diffusion theory

As part of this study, the general information seeking behavior of rural farmers, their sources of agricultural information, their self-reported adoption levels of agricultural technology, their attitudes towards agricultural information broadcast sources and their perceptions of the credibility of agricultural messages are investigated. The relevance of the diffusion model to this study stems from the theory's general applicability to information dissemination of agricultural innovations, especially among rural farmers. The model therefore has relevance to this study.

Diffusion research relates to the study of the processes in a system of how innovations, ideas, information practices, knowledge and objects become known and spread throughout the social system (Kimaro et al., 2010). According to Kwadwo & Ayalew, (2011), the diffusion model

is a logical addition to the two-step-flow model. They noted that while the two-step hypothesis "is mainly concerned with how an individual receives information and passes it along to others, the diffusion process concentrates on the final stage of the adoption or rejection of an innovation" (Heeks & Molla, 2009).

The diffusion theory has suggested that there is a two-step communication process. In this process, facilitators, communication sources and change deliver messages that are often designed and packaged outside the villages to the villagers. The change agents and facilitators involve opinion leaders and decision makers in the villages in their communication delivery efforts. The diffusion theory is definite that there is an adoption pattern of any new idea or innovation introduced into a community (Smith, 2014).

The product of the adoption process in the diffusion research is the S-shaped curve (Mwilomo, 2012). This still has contemporary importance, as it has been found that most innovations continue to have an S-shaped rate of adoption (Mtega & Msungu, 2013). The adoption rate of innovations always has a slow start. Gradually as the early adopters start to influence the rate, there occurs a fairly rapid rise. At a point, this rapid rise will start to slacken again. This gives the curve an S-shape (Mtega, 2012).

One of the most well-known and most cited studies in diffusion research has been the one conducted in 1943 among farmers in Iowa by Ryan and Gross (Mtega, 2012). In the study, an innovation that was released to Iowa farmers in 1928 resulted in noticeable agricultural innovations for over 20 years. The result was a revolution in farm productivity among the farmers, and within the period of the innovation. The Ryan and Gross study was highly useful and influential in the formation of the diffusion paradigm. Besides this, the study applied the four main elements of

diffusion; (1) an innovation is (2) communicated through certain channels (3) over time and (4) among members of a social system (Nyeresa, 2012).

The diffusion theory identified five adopter categories as follows: (1) innovators persons who are eager to try new ideas, and have more cosmopolite relationship than their peers; (2) early adopters - people who are respectable in their communities, are usually opinion leaders within the social system; (3) early majority - people who are open and interact frequently with their peers but do not necessarily hold leadership positions; (4) late majority - people who demonstrate skepticism, and will usually adopt an innovation either due to economic necessity or network pressure; and, (5) laggards - persons who are characteristically traditional, are not cosmopolite, and have a high tendency to rely mostly on the past as their point of reference (Retz
& Hasbullah, 2010). These categories follow a standard distribution curve.

Summary of the theory

A major assertion in diffusion theory is that there is a relationship between the early adopters of development messages and high socio-economic status, age, and opinion leadership (Sharma, 2008). Media behaviour, position in the social structure and personal characteristics have great value in distinguishing the early adopters from the late adopters and laggards. Perceived credibility by message recipients of the source of the message, and the perceived relevance of the message disseminated by the source to the receiver have been identified also by Sharma, (2008) as factors that influence message reception and adoption.

In relation to my study, socio-economic and demographic characteristics such as age, income, education, gender, together with attitudes and perceptions of the rural farmers towards radio and the radio broadcasts/programmes, were investigated, using the survey data. The diffusion

theory therefore will provide a basis for analyzing and presenting the findings of the data gathered through the survey research.

2.3 Relevance of Agricultural Extension Radio Programmes to small scale farmers

Radio is one of the effective ways of communicating agricultural messages such as technologies and best practices that can help farmers improve production. This is achieved through different programs like radio forums tailored to local communities. Sharma, (2008) reported about the relevance of the radio information with example of the 50% of Zambian farmers who confirmed that their crop yields increased by listening to the radio programs on agricultural extension education.

Availability and use of radio in delivering agricultural information help farmers to improve production with quality in order to acquire more profit. Churi et al., (2012) reported that independent radio broadcasting services have been found to be positive about rural development outcomes such as programs focusing on improving rural lives through farming and functioning markets. In Indonesia, vegetable farmers use prices that are broadcasted by their local radios as a starting point in negotiating with traders the following day (Shepherd, 2000). This makes the farmers to sell their produce at the right price instead of being under represented by the middle men (Mwakaje, 2010).

Agricultural communication in developing countries now seeks to emphasize both the message and the social dynamics of the message transmission (Manyozo, 2009). Rural based mass media therefore seem most likely to be able to provide new focus in agricultural communication. As the most rapid and efficient means to inform audiences, electronic mass media, in particular, can reach millions of farm families in areas which are beyond the reach of extension personnel (Acker & Jenny, 2011). Local and rural radio stations particularly penetrate remote rural

communities with their messages, and they scale the barrier of illiteracy. They are therefore useful vehicles for bringing to rural communities information, new ideas and relevant knowledge, especially in agriculture (Aker, 2010).

Local radio agricultural programs expand and make available information networks for farmers so that they are able to benefit from the knowledge and skills of extension officers and also from other farmers in the communities (Salami, Kamara & Brixiova, 2010). Local radios strength as an extension tool, therefore, is seen in its ability to reach illiterate farmers and provide them with relevant information, technology and skills on all aspects of agriculture in their own language (UFAAS, 2014).

Local radio programs are identified as a potentially useful and cost-effective way to enhance knowledge and technology transfer to farmers to raise agricultural production in developing countries. For the poor rural farmer, radio programs are a vehicle for participatory communication on agricultural information and innovations (Salami, Kamara & Brixiova, 2010).

Realizing the importance of mass media in extension, the use of radio has been evolved in terms of the policies, laws, approaches and players involved. The rationale for using radio in extension and advisory services came from an understanding that radio is an excellent and costeffective means of sharing knowledge, building awareness, facilitating informed decisionmaking and supporting the adoption of new practices by small-scale farmers. ("Radio can help transform agriculture" (Agwu & Adeniran, 2010)

Local radio agricultural programs are more utilized because of their unique characteristic such as; being pervasive and penetrative and this makes them the most preferred media channel and more so the nature of its delivery formats like features, drama, music, news, and documentaries among others which appeal to the audience differently (Bowen, 2010).

2.4 Farmers' satisfaction of Agricultural Extension Radio Programmes

In a communication situation, one of the variables that the communicator has control over is the source. The expectation is that, having the right source can increase the effectiveness of a message (Bowen, 2010). The right source is the source that is rated as credible. Manyozo, (2009) identified source credibility as one of several factors that influences message acceptance. They stated that: "the potential to accept a message depends upon message factors such as how the message is organized, the source to which is attributed, its clarity, the nature of its appeal, etc".

Credibility, according to Mtega & Msungu, (2013), could be measured through indices such as level of knowledge or technical competence of the source of the messages. In Nyeresa, (2012) view, the willingness of the public to believe what it is told is related to the public's level of trust in the source. Higher credibility can lead to greater contact by the clients and higher contact with an extension agent who is found to be credible and will lead to even higher credibility (Mtega, 2012).

In relation to radio broadcasting, it is expected that the level of perceived credibility of the radio station and its programme producers, the level of contact the farmers have with the radio staff, and the relevance of the radio messages, could all influence the level of perceived credibility of the radio station by its audience (Mtega, 2012).

Communication strategies for development encourage message sharing between the development communicator and the beneficiaries of development messages (Sharma, 2008). Therefore, recent approaches in the communication of agriculture and rural development messages with the rural folks and peasants in developing countries have shifted from the oneway approach. The approach is now participatory and dialogical (Retz & Hasbullah, 2010).

In rural radio broadcasting, participatory message sharing and programme production are becoming increasingly important as ways of communicating agricultural messages with the farmers (Kwadwo & Ayalew, 2011).

Psychological processes and capacities influence our ability to function as members of a society, as they determine our ability to interpret, understand, and make judgments (Fu & Akter, 2010). Attitudes and perceptions have been studied copiously in relation to message learning and adoption. The importance of farmers' attitudes in message understanding and technology adoption among peasants and rural farmers in many parts of the world has been reported. Communication is a voluntary activity, and the propensity to get engaged in it will depend to a large extent on the perceived benefits to be derived from it.

According to Ojebode, (2008), farmer attitudes provide a guide to their behavior, and as such people's attitudes influence their perceptions and thinking. A positive belief about an object therefore has a high likelihood of leading to a positive feeling or disposition towards the object (Chiou & Tucker, 2011). Positive attitudes towards radio therefore are expected to evoke high listenership to, and high participation in, the radio station's programmes.

Perceptions, like attitudes, have influence on audience members' level of acceptance of the selection of the source of communication and recall of the messages from a communication source (Aker, 2010). Credibility, which is the degree of perceived trustworthiness and competence that audiences ascribe to a communication source, is an important element in the spread of innovations. Credibility could be measured through indices such as level of knowledge or technical competence of the source of the messages (Sife et al., 2010).

2.5 Level of implementation of acquired knowledge from Agricultural Extension Radio Programmes

Rural radio in many developing countries is an important tool for use in many aspects of development, including promoting the process of participatory democracy and rural and community development (Sife et al., 2010). Agricultural communication and extension, however, take more air time of these rural radio stations. This is understandable and acceptable because radio stations in rural areas in Africa have a predominantly agricultural clientele, and the radio stations are always aware that information on agriculture is most needed by the rural populations where the local radio stations operate (Jung, 2013).

Communication and development experts believe that radio is the most appropriate medium for rural poverty reduction and rural emancipation programmes (Kwadwo & Ayalew, 2011). Research findings on the use of radio in agricultural communication in developing countries are widespread (Smith, 2014). Most of these reports suggest varying degrees of knowledge gain and behavior change among peasant farmers when they are exposed to
agricultural extension messages.

The strength of rural radio as an extension tool lies in its relative advantage of being able to reach illiterate rural farmers in even the remotest areas. It also provides them with information on all aspects of agriculture in the languages they understand (Sharma, 2008). Rural and community radio are effective in blending the people's cultures and traditional communication channels with development messages (Retz & Hasbullah, 2010). One of the early approaches to the use of rural radio for agricultural extension in Ghana was the experiment of the Wonsuom Rural Communication Project at Swedru in the Central Region (Retz & Hasbullah, 2010) reported that the Wonsuom Rural Communication Project was important not only for the valuable development messages it provided, but also it offered the people a platform for the exchange of ideas

Programmes for radio broadcasts are guided by the needs of the farmers. Regular followup visits of the programme staff to the communities for programme production, and regular follow-ups to the communities after the programmes, can enable a continuous and fruitful dialogue with the farmers (Mwilomo, 2012).

2.6 Radio programme formats preferred by small scale farmers in acquiring knowledge.

Radio is the most important mass communication medium in Africa. As a result of this, there is high radio ownership and listenership among even illiterate rural populations. Two studies in Nigeria by Mtega, & Msungu, (2013) revealed a high radio listenership and radio ownership. Nyeresa, (2012), after a study on the diffusion of innovations from a local radio station, Radio Benue, reported that 69% of the farmers owned radio sets. They found also that 66% of the farmers listened to the radio agricultural broadcasts from Radio Benue. In a study on mass media and health communication in rural Nigeria, Aker, (2010) found that radio ownership was high among the two communities he used for the study.

Appropriateness of agricultural information is very crucial to farmers' success. Farmers need to be provided with the information at the right time so as to apply that information in their farming activities for better farm productivity. Aker, (2010) showed that timely availability of information is vital for effective performance of managerial functions such as planning, organizing, leading, and control.

Farmers need timely information to be able to plan for activities to be done according to the situation encountered. For example timely information about rainfall will help them plan for the time to start preparation of their farms (Mwilomo, 2012). Also this information will make them aware of the kinds of crops to plant depending on the rate of rainfall in a particular season as most of these farmers depend on rain fed agriculture. On the other hand timely information on pest

outbreaks will allow the farmers to organize themselves on how to combat the problem so as to overcome losses (Churi et al., 2012).

The treatment of the cognitive response theory revealed that message relevance, effect of programming formats (variables), and the individual's level of already stored knowledge and effort to learn from the broadcast news, will all add up to determine the level of recall and comprehension of broadcast news (Mwakaje, 2010).

The discussion on the diffusion theory suggested that perceived credibility by message recipients of the source of the message, and the perceived relevance of the messages disseminated are factors that influence message reception and adoption. In relation to this study, it is expected that psychological factors such as farmers' attitudes towards local radio, and their perceptions of the credibility of radio messages, will have an influence on radio listenership, and application of the radio messages (Mtega & Msungu, 2013).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents procedures and methods that were followed to manage the study. It discusses aspects like research design, study population, sample size and determination, sampling techniques and procedure, data collection methods, data quality control**,** data analysis and ethical considerations.

3.2 Study area

The study was conducted across 21 radio listener groups of agricultural extension programs aired on Kasese Guide Radio (KGR), UBC Ngeya FM and Radio Messiah in Kasese municipality, Kasese district. Kasese District is bordered by Bunyangabu District to the north, Kamwenge District to the east, Rubirizi District to the south, and the Democratic Republic of Congo to the west.

Agriculture is the mainstay of the economy of district characterized by subsistence production. The area is blessed with a rich natural resource base of favorable climatic conditions and fertile soils for agricultural production. Though 90% of the population depend on subsistence agriculture, the gap in information access has remained synonymous. Agricultural radio extension programs have been promoted to redemify the ever declining agriculture performance across the district.

3.3 Study design

Denvir and Millett (2003), research design provides the glue that holds the research project together. This study adopted a descriptive-cross sectional survey employing quantitative and qualitative approaches to capture data across different listenership groups in the district. The design helped the researcher in generating basic knowledge, clarifying issues and study in-depth the relationship between agricultural extension radio programmes and Smallholder farmer activities.

3.4 Study population

The study targeted radio listener groups and group leaders of agricultural extension radio programs aired on different radio stations in Kasese district. The choice for radio listener groups

came from the fact that the other program listeners had no knowledge about the phenomena being investigated. The researcher therefore believed listener groups would provide very accurate information.

3.5 Sample Size determination.

The study sample was determined using a formula by (Kirkwood 1998:192). The level of confidence for the study was set at 95%, with 5% as the tolerable error. The sample size for the study was determined using the sample estimation formula below (Kirkwood 1998:192);

$$n = p \times q \times \frac{(Z_{\&/2})^2}{e} \text{ or}$$

$$n = Z^2_{\&/2} \times \frac{(p) \times (1-p)}{e^2}$$

Where:

n = sample size p = Target population = 17% = 0.17 q = Non-target population = 83% = 0.83 e = standard error = 5% = 0.05

$Z_{\&/2}$= Z value of 95% confidence = 1.96 from the Z-table

Substituting the values into the formula: $n = 0.17 \times 0.83 \times \frac{(1.96)^2}{0.0025}$ = 216 respondents

Therefore 216 participants from different listener groups were considered for the study.

3.6 Sampling strategy

Hallet (2012) described sampling as the process of choosing the units of the target population to be included in the study in such a way that the selected sample elements represent the

population. The study adopted a snowball sampling technique in the selection of respondents. Snowball sampling is where research participants recruit other participants for study. It is used in situations where potential participants are hard to find. Since potential respondents were difficult to find given the sensitivity of the subject, the researcher identified potential respondents in the population. That is the researcher initially identified 3 categories of respondents form each of the 21 listener groups. These included 2 group members and 1 group leader. These categories of respondents were asked to recruit other people (and then ask *those* people to recruit others). These steps were repeated until the needed sample size was got from each group.

3.7 Data Sources

Radio Listener member groups were the main source of primary data in the study. In addition, listener group leaders provided information as Key Informants.

Secondary data was gathered from scholarly books. Secondary sources included published and unpublished information about the subject matter. This kind of information was collected from books, articles, records, journals and reports.

3.8 Data collection methods/tools

The study applied questionnaires and interview methods for collecting primary data.

3.8.1 Questionnaire survey

A semi-structured questionnaire that had both closed ended and open ended questions were designed and used to generate quantifiable information from the respondents. The questionnaire was translated into local languages to make the questions more simple, clear and understandable to the respondents. Questions captured information on demographic characteristics, relevance of Agricultural Extension Radio Programmes to farmer's activities, level of satisfaction of

Agricultural Extension Radio Programmes, level of implementation of acquired knowledge from the Programmes and radio programme formats preferred by farmers in acquiring knowledge.

3.8.2 Interview guide

An interview guide involves presentation of oral verbal stimuli and reply in terms of oral verbal responses. Oral personal interviews that involved a face to face conversation using an interview guide were used to capture opinions and views from different key informant categories. This helped the researcher to capture supplementary information on the subject under investigation.

3.9 Data Quality Control

3.9.1 Validity of Instruments

Validity is concerned with whether the measure used is actually measuring the concepts it is supposed to be measuring (Hardy and Bryman, 2004). Content validity was ensured by using expert opinion from the supervisors, and pre-testing instruments on 5 respondents outside the target sample to identify problems associated with answering the questions. This aided in making prior adjustments.

3.9.2 Reliability of instruments

Mugenda (1999) defines reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trials. Reliability of the instruments was tested by use of test-re-test method. The questionnaires were administered to 5 respondents from each group selected. The same questionnaires were administered after a week to the same group. The answered questionnaires were scored manually again and a comparison of the results was made. Pearson's correlation coefficient was computed to establish the extent of reliability. Gay

(1992), notes that a correlation co efficient of 0.7 and above is acceptable. A correlation coefficient of 0.753 was realized from the respondents.

3.10 Ethical clearance and considerations

This research was approved by Bishop Stuart University Graduate School. Ethical approval was obtained from the BSU Ethics Review Committee. Thereafter, a research permit was obtained from the graduate coordinator prior to the study. Administrative authorization to carry out the study was sought from the respective radios and listener group administrators.

Informed consent was obtained from group members prior to their enrollment into the study. Participation in the study was voluntary. Confidentiality of the information from the study participants was maintained throughout the study. In addition, codes were used to maintain anonymity of all participants and keep their information confidential.

3.11 Data analysis

Information obtained from the structured questionnaires was collaborated during data analysis. Data then captured in Microsoft EXCEL and then exported to Statistical package for social scientists (SPSS), Version 16.0 to generate descriptive statistics and inferential statistics.

Techniques for summarizing data for continuous variables were used such as mean, variance and standard deviation while frequencies and percentages were generated for categorical variables. Inferential statistics were applied where necessary to generate and interpret any significant associations between variables at both bivariate and multivariate level.

Qualitative data was analyzed in verbatim form based on study themes.

3.12 Limitations of the study

Respondents' bias – Some respondents delayed answering questionnaires because most of them were away to the gardens and thus hard to trace. This was solved by appealing to them for cooperation and regular follow up.

Lack of enough funds – Funds were needed especially for transport, purchasing stationery, typesetting, printing and photocopying. This problem was addressed by appealing to wellwishers and family members for support.

Information bias: Respondents were reluctant in giving out information due to the sensitivity of the topic under study. This was solved by assuring them that the information provided was for academic purposes and would be treated with utmost confidentiality.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION FINDINGS

4.1 The response rate

This chapter presents the analysis and interpretations of the findings in line with the objectives. Quantitative methods were used in the analysis to generate both descriptive and inferential statistics. The findings were analyzed and interpreted as social demographic characteristics of the respondents, relevance of Agricultural Extension Radio Programmes to small scale farmers, level of farmers' satisfaction of Agricultural Extension Radio Programmes, level of implementation of acquired knowledge from Agricultural Extension Radio Programmes and radio programme formats preferred by small scale farmers in acquiring knowledge. Findings were presented in frequency tables, pie-charts and graphs.

4.2 Socio-economics of the respondents

The demographic characteristics studied included; gender, marital status, source of income, age, education level, household size and landholdings in acres. The purpose for capturing information on these characteristics was to help the researcher in determining their influence on resource ownership and utilisation in the area.

Figure 1: Distribution of respondents by gender

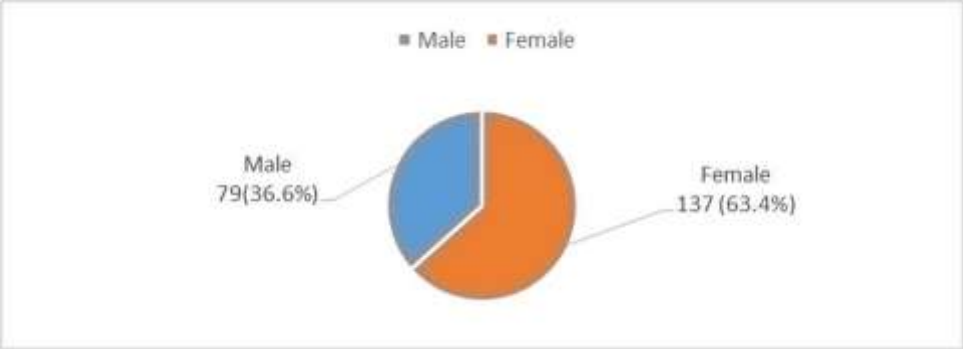
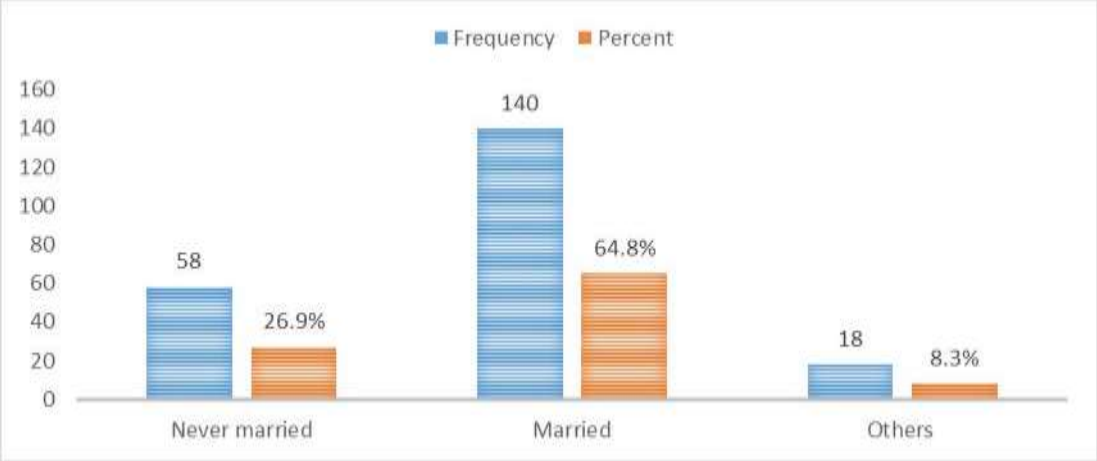


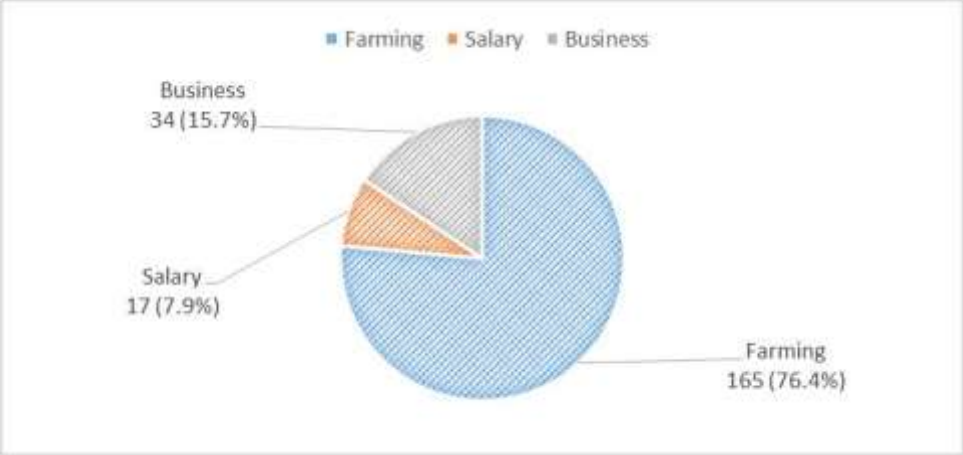
Figure 1 above, shows that 63.4% of the respondents were female and 36.6% male. The high number of women compared to men is reflected on the agricultural sector in Uganda which is largely dominated by women than men.

Figure 2: Distribution of respondents by marital status



Results in figure 2 above indicated that 64.8% of the respondents were married, 26.9% single while 8.3% included those that were cohabiting, separated and widowed.

Figure 3: Sources of income



According to the findings in figure 3 above, more than a half (76.4%) of the respondents depended on agriculture for income, 15.7% operated small scale business for income while 7.9% relied on salary.

Table 1: Descriptive statistics of age, education level, household size and land ownership

	N	Minimum	Maximum	Mean	Std. Deviation
Age in years	216	23	72	39.29	11.816
Educational level in years	216	4	16	12.32	3.619
Household size	216	4	10	6.12	4.141
Total size of land owned in acres	216	1.5	14.0	2.490	3.0226
Valid N (listwise)	216				

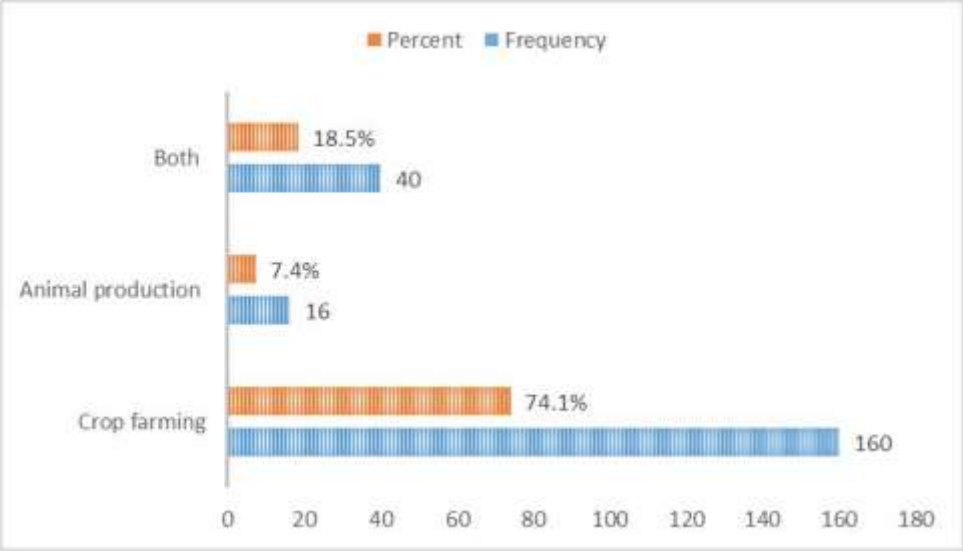
From the analysis, average age of the respondents was 39 years with a minimum of 18 and a maximum 72 years. Majority of the respondents were aged 23 – 39.

Average number of years in school were 12 (senior five) with a minimum of four years and a maximum of 16 years (degree). Most farmers were partially educated hence literate.

Findings further indicated that an average household comprised of six (6) members, with the smallest having four (4) members and the biggest having ten (10) members.

Average land holdings were of 2.5 acres with minimum holdings of 1.5 acres and maximum holding 14 acres.

Figure 4: Form of agriculture practiced



Results in figure 4 above show that majority 74.15 of the respondents studied practiced crop farming, 7.4% animal production while 18.5% practiced both crop and animal production.

4.3 Relevance of Agricultural Extension Radio Programmes to small scale farmers

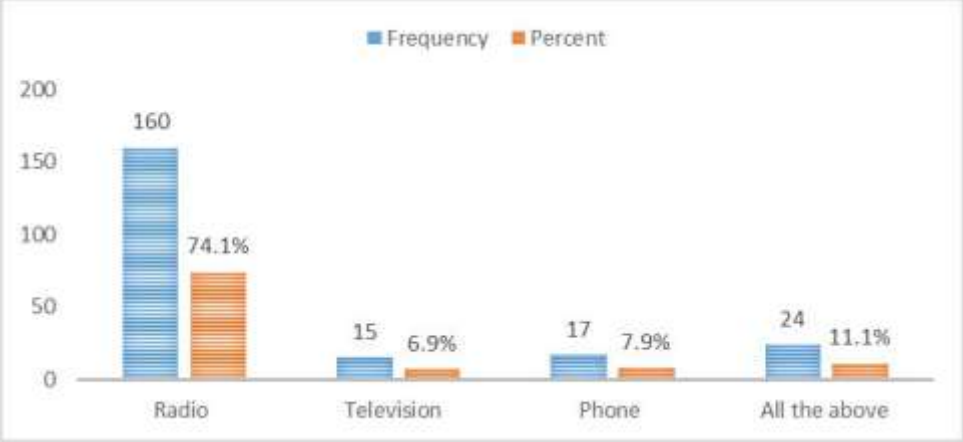
This section addressed research question one two that sought to assess the relevance of Agricultural Extension Radio Programmes to small scale farmers. Quantitative responses generated were captured and analyzed to generate frequencies and percentages as presented below;

Table 2: Do you use any form of media in your agricultural activities

Variety	Frequency	Percent	Cumulative Percent
Yes	216	100	100.0
Total	216	100.0	

On whether respondents used any form of media to support them with information on their agricultural activities, 100% said yes and none mentioned no.

Figure 5: Form of media used to access agricultural information



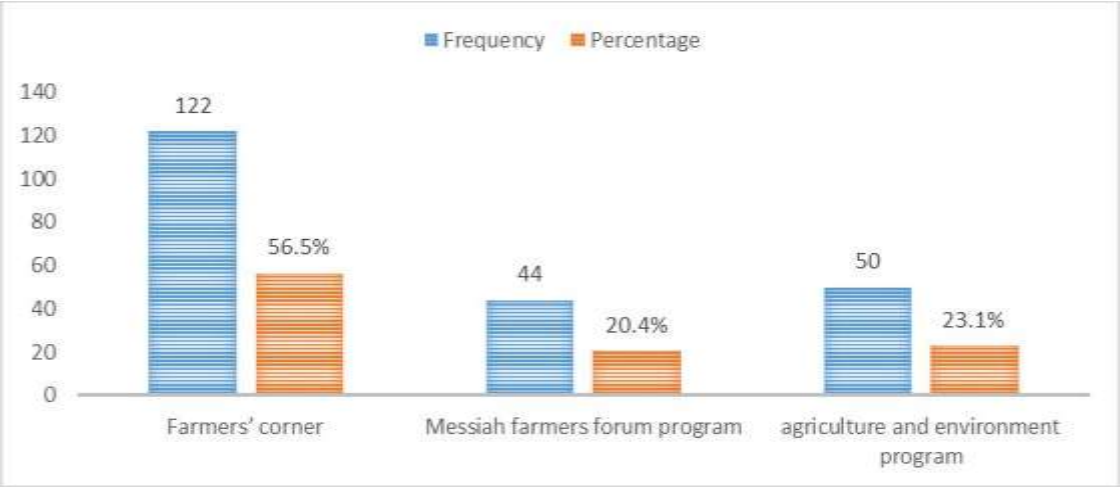
Results in figure 5 above indicated that radio was the most commonly used form of media to access agricultural information (74.1%), followed by phone 7.9% and Television 6.9%. However 11.1% used both Radio, Television and Phone.

Table 3: Frequency of using the form of media mentioned for accessing agricultural information

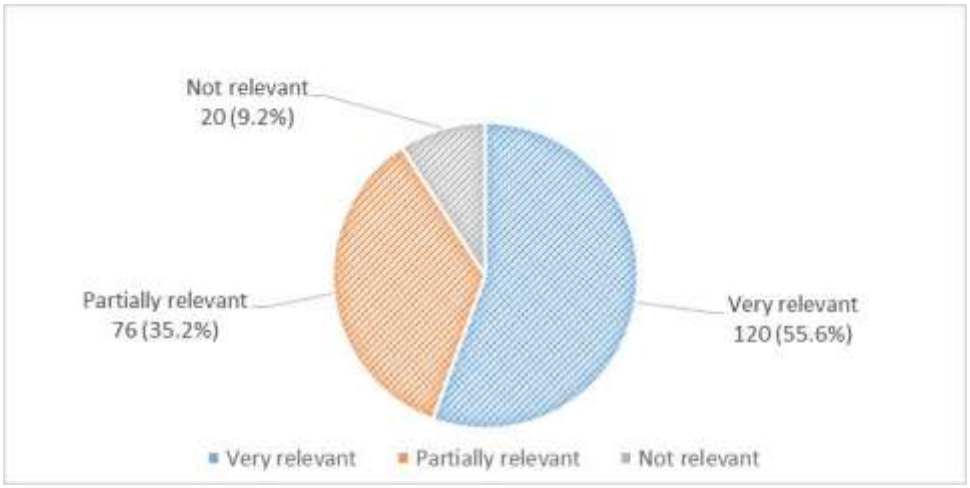
	Variety	**Daily**	**Once a week**	**Once in two weeks**	**Total**
		Freq. (%)	Freq. (%)	Freq. (%)	
Valid	Radio	160 (74.1)	32 (14.8)	24 (11.1)	216
	Television	12 (5.6)	15 (6.9)	189 (87.5)	216
	Phone	17 (7.9)	12 (5.6)	187 (86.5)	216

According to the findings in table 3 above, more than a half 74.1% of the respondents used a radio to access agricultural information daily, 14.8% once a week and 11.1% once in two weeks. In addition, only 5.6% of the respondents used television to access information daily, 6.9% once in a week and the majority 87.5% once in two weeks. 7.9% used a phone for information daily, 5.6% once a week and 86.5% once in two weeks.

Figure 6: Radio programmes used for accessing agricultural information



Results in figure 6 above showed that most 56.5% of the respondents used farmers' corner on Kasese guide radio to access agricultural information, 23.1% agriculture and environment program and 20.4% Messiah farmers forum program. **Figure 7: The relevance of radio agricultural programmes**



The responses of the listeners on the relevance of radio agricultural programmes to their information needs are contained in figure 7. The results show that 55.6% of the respondents indicated that the programmes were very relevant to their information needs, 35.2% indicated that

the programmes were partially relevant, while 9.2% did not find the programmes relevant at all. Generally, 90.8% of the respondents found the programmes relevant to some extent.

Table 4: Crop management information accessed through the program

	Program	Frequency	Percent	Cumulative Percent
Valid	Enterprise selection	23	10.6	10.6
	Crop management practices	32	14.8	25.4
	Organic manure use	33	15.3	40.7
	Soil and water conservation	36	16.7	57.4
	Pest and disease management	43	19.9	77.3
	Post-harvest handling	19	8.8	86.1
	All the above	30	13.9	100.0
	Total	216	100.0	

Results on crop management information accessed through agricultural radio programmes were presented in table 4 above. Most 19.9% of the respondents accessed information on pest and disease management, 16.7% soil and water conservation, 15.3% organic manure use and application, 14.8% crop management practices, 10.6% enterprise selection, 8.8% post-harvest handling while 13.9% accessed information on all the practices.

Table 5: Animal management information accessed through the program

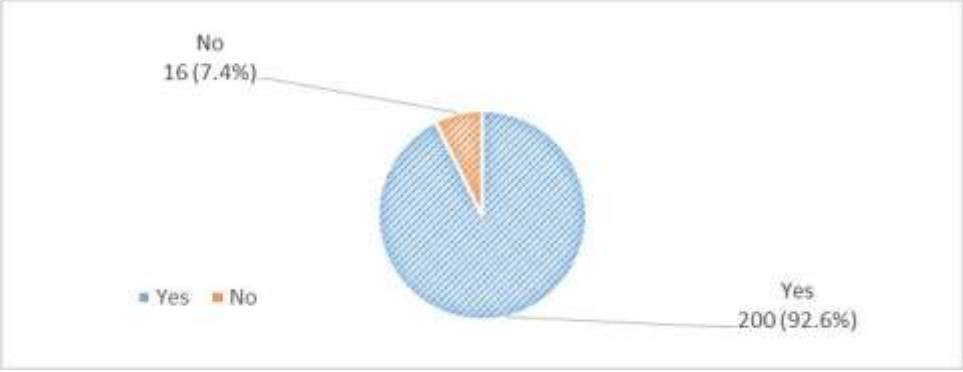
	Program	Frequency	Percent	Cumulative Percent
Valid	Breed selection	18	8.4	8.4
	Management practices	59	27.3	35.7
	Animal breeding	15	6.9	42.6
	Parasite and disease management	60	27.8	70.4
	Marketing	28	12.9	83.3
	All the above	36	16.7	100.0
	Total	216	100.0	

Results on animal management information accessed through agricultural radio programmes were presented in table 5 above. Majority 27.8% of the respondents accessed information parasite and disease management, 27.3% management practices, 12.9% marketing, 8.4% breed selection, 6.9% animal breeding and 16.7% accessed all the information.

4.4 Farmers' satisfaction of Agricultural Extension Radio Programmes

This section addressed research question three which sought to assess farmers' satisfaction of Agricultural Extension Radio Programmes. The captured responses were analyzed and quantitatively interpreted using frequencies and percentages;

Figure 8: Whether respondents participated in agricultural radio programmes



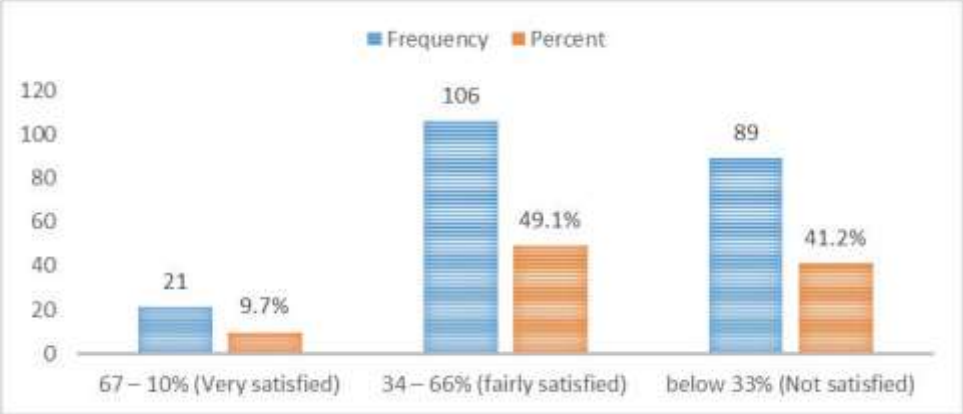
On whether respondents participated in any agricultural radio programmes across the radio program service providers, 92.6% said yes and 7.4% said no.

Table 6: Mode of participation in agricultural radio programmes

	Variety	Frequency	Percent	Cumulative Percent
Valid	SMS	56	25.9	25.9
	Calling studio	22	10.2	36.1
	Sharing information with group members	138	63.9	100.0
	Total	216	100.0	

According to the results in table 6 above, more than a half 63.9% of the respondents participated in agricultural radio programmes through sharing information with group members, 25.9% participated directly through SMS and 10.2% calling studio respectively.

Figure 9: Level of satisfaction in agricultural radio programmes



Regarding the level of satisfaction derived from agricultural radio programmes, only 9.7% of the respondents were very satisfied with the programs, 49.1% fairly satisfied, however 41.2% were no satisfied.

4.5 Level implementation of acquired knowledge from Agricultural Extension Radio Programmes

This section of the study addressed research question three which was assessing the level of implementation of acquired knowledge from Agricultural Extension Radio Programmes. Captured responses were analyzed and quantitatively interpreted using frequencies and percentages;

Table 7: Level of implementation of the knowledge acquired through agricultural radio programmes

	1 – 20%	**21 – 40%**	**41 – 60%**	**Above 61%**	**Total**
Crop enterprises	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	
Crop selection	87 (40.3)	90 (41.7)	30 (13.9)	9 (4.2)	216
Tillage	12 (5.6)	32 (14.8)	90 (41.7)	82 (37.9)	216
SWC measures	38 (17.6)	98 (45.4)	64 (29.6)	16 (7.4)	216
Manure application	17 (7.9)	117 (54.2)	56 (25.9)	26 (12)	216
Weed control	11 (5)	56 (25.9)	97 (44.9)	56 (25.9)	216
Pest and disease management	9 (4.2)	23 (10.6)	136 (62.9)	48 (22.2)	216
Post-harvesting handling	12 (5.5)	56 (25.9)	133 (61.2)	15 (6.9)	216

According to the results in table 7 above, level of implementation of the knowledge acquired through agricultural radio programmes differed by activity/practice. For example level of implementation of knowledge acquired on crop management practices, was 21 – 40% for crop selection, 41 – 60% for tillage, 21 – 40% for soil and water conservation measures, 21 – 40% for

manure application, 41 – 60% weed control, 41 – 60% for pest and disease management and 41 – 60% for post-harvesting handling.

Table 8: Level of implementation of the knowledge acquired through agricultural radio programmes

	1 – 20%	**21 – 40%**	**41 – 60%**	**Above 61%**	**Total**
Animal enterprises	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	
Breed selection	135 (62.5)	30 (13.9)	45 (20.8)	6 (2.8)	216
Management practices	40 (18.5)	111 (51.4)	48 (22.2)	17 (7.9)	216
Pasture management	117 (54.2)	27 (12.5)	56 (25.9)	16 (7.4)	216
Pest and disease control	14 (6.5)	38 (17.6)	123 (56.9)	40 (18.5)	216

Results in table 8 above indicate that, level of implementation of knowledge acquired through agricultural radio programmes differed across activity/practice. Level of implementation of knowledge acquired on animal production and management was generally 1 – 20% for breed selection, 21 – 40% for management practices, 1 – 20% for pasture management practices and 41 – 60% for pest and disease management and control.

4.6 Radio programme formats preferred by small scale farmers in acquiring knowledge

This section of the study addressed research question four which sought to evaluate radio programme formats preferred by small scale farmers in acquiring knowledge. Captured responses were analyzed quantitatively and interpreted using frequencies and percentages;

Table 9: Radio programme formats preferred by small scale farmers in acquiring knowledge

	Practice	**Frequency**	**Percent**	**Cumulative Percent**
Valid	Combined enterprise talk shows	16	7.4	7.4
	Discussion of individual enterprise (s) at a time	47	21.8	29.2

	Evening talk shows	28	12.9	42.1
	Programme/talk show repeats	33	15.3	57.4
	Interactive talk shows/discussion	50	23.1	80.5
	Farmer centered talk shows	22	10.2	90.7
	Involving indigenous knowledge in talk shows	20	9.3	100.0
	Total	216	100.0	

Radio programme formats preferred by small scale farmers in acquiring knowledge were presented in table 9 above. Most 23.1% of the respondents suggested a program format that promoted interactive talks/discussions, 21.8% suggested talk show formats that discuss an individual enterprise at a time, 15.3% mentioned programme/talk show repeats, 12.9% evening talk show, 10.2% talked of radio formats that are farmer centered, 9.3% recommended talk shows that involve indigenous knowledge and only 7.4% proposed talk shows that combined enterprises.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summery of the findings

The study was assessing the effect of radio agricultural programmes on the activities of small scale farmers in Kasese District. A descriptive cross-sectional survey using both qualitative and quantitative methods was employed to capture and analyze data from 216 respondents across radio listener groups.

Results indicated that Agricultural Extension Radio Programmes were pertinent to small scale farmer activities like pest and disease management, soil and water conservation, organic manure use and application, general management practices, enterprise selection and post-harvest

handling. In addition extension radio programmes were relevant in animal management activities like breed selection, pasture management and product marketing. Farmers were fairly satisfied with Agricultural Extension Radio Programmes though they continuously participated through SMS, direct calling and group information sharing. Farmers level of implementation of the acquired knowledge through Agricultural Extension Radio Programmes differed based on activities practiced; implementation on crop selection was 21 – 40%, tillage 41 – 60%, soil and water conservation measures 21 – 40%, manure application 21 – 40%, weed control 41 – 60%, pest and disease management 41 – 60%, post-harvesting handling 41 – 60%, breed selection 1 – 20% and pasture management practices 1 – 20%. The study identified different radio programme formats preferred by small scale farmers in acquiring knowledge such as; interactive talk shows/discussions, discussing individual enterprises at a time, programme/talk show repeats, evening shows, farmer-centered programs and formats that considered indigenous knowledge.

5.2 Discussion of Findings

5.2.1 Relevance of Agricultural Extension Radio Programmes to small scale farmers

The study found out that extension radio programmes were very relevant to information needs of the farmers. Understanding of farming activities like pest and disease management, soil and water conservation, organic manure use and application, management practices, enterprise selection, post-harvest handling, animal management, breed selection, pasture management and marketing seem to have improved after listening to Agricultural Extension Radio Programmes across various radio stations in the area. These study findings are in line with Churi et al., (2012) who argued that availability and use of radio in delivering agricultural information help farmers to improve production with quality in order to acquire more profit. He reported that independent radio broadcasting services have been found to be positive about rural development outcomes such as

programs focusing on improving rural lives through farming and functioning markets. In Indonesia, vegetable farmers use prices that are broadcasted by their local radios as a starting point in negotiating with traders the following day. This makes the farmers to sell their produce at the right price instead of being under represented by the middle men.

Findings are comparable to findings by Salami, Kamara & Brixiova, (2010) who argued that local radio agricultural programs expand and make available information networks for farmers so that they are able to benefit from the knowledge and skills of extension officers and also from other farmers in the communities. Local radios strength as an extension tool, therefore, is seen in its ability to reach illiterate farmers and provide them with relevant information, technology and skills on all aspects of agriculture in their own language.

2.2.2 Farmers' satisfaction of Agricultural Extension Radio Programmes

According to the results, the general analysis of the findings indicated that farmers were fairly satisfied with Agricultural Extension Radio Programmes despite their continuous participation through SMS, direct studio calls and group information sharing. The fair satisfaction was due to factors like; lack of signal, signal breaks up and the limited public participation in the programs. This study findings are comparable to those of Mtega, (2012) who revealed that in relation to radio broadcasting, it is expected that the level of perceived credibility of the radio station and its programme producers, the level of contact the farmers have with the radio staff, and the relevance of the radio messages, could all influence the level of perceived credibility of the radio station by its audience.

Findings are also comparable to findings by Nyeresa, (2012) who in her view, said the willingness of the public to believe what it is told is related to the public's level of trust in the

source. Higher credibility can lead to greater contact by the clients and higher contact with an extension agent who is found to be credible will lead to even higher credibility.

2.2.3 Level implementation of acquired knowledge from Agricultural Extension Radio Programmes

The programmes made impact on the knowledge-gain level of the target audience. The listeners indicated the various improved practices they gained knowledge in and found very useful as a result of the radio agricultural programmes. The level at which farmers implemented knowledge acquired from Agricultural Extension Radio Programmes differed across activities/practices. These study findings are comparable to findings by Sharma, (2008) who revealed that the strength of rural radio as an extension tool lies in its relative advantage of being able to reach illiterate rural farmers in even the remotest areas. It also provides them with information on all aspects of agriculture in the languages they understand. Rural and community radio are effective in blending the people's cultures and traditional communication channels with development messages.

Findings are also in agreement with Mwilomo, (2012) who said that programmes for radio broadcasts are guided by the needs of the farmers. Regular follow-up visits of the programme staff to the communities for programme production, and regular follow-ups to the communities after the programmes, can enable a continuous and fruitful dialogue with the
farmers.

2.2.4 Radio programme formats preferred by small scale farmers in acquiring knowledge

The study came out with different radio programme formats preferred by small scale farmers in acquiring knowledge such as; interactive talk shows/discussions, discussing individual

enterprises at a time with Star or prominent farmers, programme/talk show repeats, evening shows, farmer centered programs and formats that considered indigenous knowledge. These study findings are in line with Aker, (2010) who argued that appropriateness of agricultural information is very crucial to farmers' success. Farmers need to be provided with the information at the right time so as to apply that information in their farming activities for better farm management. He showed that timely availability of information is vital for effective performance of managerial functions such as planning, organizing, leading, and control.

Findings are also in comparison with Mwilomo, (2012) who argued that farmers need timely information to be able to plan for activities to be done according to the situations encountered. For example timely information about rainfall will help them plan for the time to start preparation of their farms. Also this information will make them aware of the kinds of crops to plant depending on the expected amount of rainfall in a particular season as most of these farmers depend on rain fed agriculture. On the other hand timely information on pest outbreak will allow the farmers to organize themselves on how to combat the problem so as to overcome losses.

5.3 Conclusions

Basing on the results, the following conclusions were made;

The study concluded that Agricultural Extension Radio Programmes were pertinent to small scale farmers' activities like pest and disease management, soil and water conservation, organic manure use and application, general farm management practices, enterprise selection, post-harvest handling and others. Programmes were equally relevant towards animal management activities like breed selection, pasture management and product marketing.

Secondly, the study concluded that farmers were fairly satisfied with Agricultural Extension Radio Programmes despite their continuous participation through SMS, direct studio calls and group information sharing.

The study farmer's also found out that farmers had implemented the knowledge acquired from Agricultural Extension Radio Programmes at different levels based on the activity/practices like; crop selection, land tillage, soil and water conservation measures, manure use and application, weed control, pest and disease management, post-harvesting handling, breed selection and pasture management. The general level of implementation was between 1 to 60%.

The study further concluded that there were different radio programme formats preferred by small scale farmers in acquiring knowledge such as; interactive talk shows/discussions, discussing individual enterprises at a time, programme/talk show repeats, evening shows, farmercentered programs and formats that considered indigenous knowledge.

5.4 Recommendations

The following recommendations were made in line with the study objectives. .

Promoting community participation and empowerment. The strength of rural radio as an extension tool is widely regarded to lie in its ability to reach illiterate farmers and provide them with information relating to all aspects of agricultural production in a language they understand. Therefore programs/talk shows should be presented in local languages and must minimize the use of English and scientific terms.

Radio extension programmes, need to be prepared and broadcast in a way that makes them accessible to the target audience. This requires program organizers/moderators to consult with the community so as to identify not only the different subject priorities farmers need but also the timing

of the broadcasts including any meetings of listener groups or follow-up training, to fit in with work and household schedules.

There is need for more capacity building and external support. This can be achieved through providing extra agricultural advisory services to supplement information and knowledge gained via radio programs.

The programs should be broadcast in the evenings as from 6.00 pm when farmers have returned from the field.

Group listener-ship should be encouraged through establishment of community listening centres in the rural areas. This may help those who don't own personal radio sets. It may also enhance interaction and discussion of the messages among the listeners, thereby encouraging active participation and better comprehension.

Since radio stations set up in rural areas have a predominantly agricultural clientele, Agricultural program moderators are recommended to use participatory approaches or top-down technical scientific information approach that embraces diversity of both local agricultural problems and farmers' existing knowledge and skills.

One of the difficulties of operating a schedule of agricultural extension programmes on rural radio is accessing agricultural research material to support the range of topics requested by farmers. Therefore there is need to improve the linkages between agricultural research and host radio stations in the area as this would help radio broadcasters to share their experiences and provides training in scriptwriting. This could be achieved by bringing Agricultural researchers and radio broadcasters together to improve the planning, preparation, format and evaluation of their extension programmes.

There is need for Knowledge Management, Information and Communication, for example integrating local indigenous knowledge in conveying agricultural information.

There is a need for national communication and media strategies which incorporate pluralistic approaches to the media within the more traditional centralized broadcasting and information systems and promote the cross-sectorial importance of information and communication in budgetary planning processes such as Poverty Reduction Strategy Papers (PRSPs).

The national policy environment in many developing countries could be improved through legislation to encourage independent community broadcasting, including streamlined licensing and subsidies for new information services such as FM stations, internet providers and rural telecommunication services.

5.4 Areas for further research

Since majority of the farmers indicated that they preferred listening to radio in the evenings to any other time. A study is needed to be conducted on the effect of agricultural radio program timing on the listenership and internalization of agriculture extension information.

Secondly, given that most rural people are always engaged in one or more activities when listening to radio or viewing television, another study should be conducted to assess the effect of distraction on recall and comprehension of rural radio listeners that would present useful insights into the amount of learning that takes place within rural farmers in Kasese District.

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APPENDICES

APPENDIX I: QUESTIONNAIRE FOR FARMERS

Dear respondent

I am **Mwahulhwa Wilson,** a student of Bishop Stuart University carrying out a study titled "**The Effect of Radio Agricultural Programmes on the Activities of Small Scale Farmers in Kasese District**". This study is part of the requirements for my course and is for academic purposes only, the answers that you provide will be treated with utmost confidentiality, please co-operate by providing the correct information only.

Demographic data

Name…….…….

Telephone number…… Sub county…….

Parish…….……..Village……..……..

Position in the household……..…….

1. Gender: a. Male( ) b. Female ( )

2. Age in years…….…….

3. Educational level in years……..…….

4. Marital status

a. Never married ( ) b. Married ( )

5. Source of livelihood

a. Farming ( ) b. Business ( ) c. Employment ( ) d. Others…….

6. Household size……..

7. Size of land owned (in acres) ……

8. What proportion of your farm is used for?

a. Crop production…….. b. Livestock production…….

c. Homestead…… d. others (specify)……

Media Use

9. Do you use any form of media?

a. Yes ( ) b. No ( )

10. If yes, which form of media do you use?

……

……

11. How often do you access;

a. Radio

i) Daily ii) twice a week iii) rarely

b. Television

i) Daily ii) twice a week iii) rarely

c. Newspapers

i) Daily ii) twice a week iii) rarely

d. Phone

i) Daily ii) twice a week iii) rarely

12. What is the reason for your access of the preferred medium in 3 above?

……

……

Listenership to agricultural extension programmes

13. Do you listen to any agriculture programmes on any radio station across Kasese?

a. Yes ( ) b. No ( )

14. If yes, which programme(s) do you listen to?

……

……

15. On which specific radio station do you access the program?

……

……

16. How often do you listen to the programme?

a. Often ( ) b. Seldom ( ) c. Not at all ( )

17. When did you last listen to the programme?

a. Days ……

b. Weeks……...

c. Months…….

18. Do you participate in the programme?

a. Yes ( ) b. No ( )

19. How do you participate in the programme?

a. SMS ( ) b. Calling ( ) c. Other (state)…….

20. Are the topics addressed in the programme relevant to your agriculture activities?

a. Yes ( ) b. No ( )

21. In which specific agricultural activities is the programme most relevant?

a. Fertilizer use b. crop husbandry c. SWC

d. Animal health and management e. Crop management practices

f. Post-harvest management g. Record keeping h. Group formation and management

i. Others (specify)…… ……

22. Are you satisfied with the programme content?

a. Yes ( ) b. No ( )

23. If yes, how are you satisfied with the programme content on a scale of 100%?

a. 67 – 10% (Very satisfied) ( )

b. 34 – 66% (fairly satisfied) ( )

c. below 33% (Not satisfied) ( )

24. What is your reason (s) for the level of satisfaction in 11 above?

……

……

25. If no, 10 above why?

……

……

26. Have you been able to practice what you heard in the programme?

a. Yes ( ) b. No ( )

27. How helpful (if at all) do you find what you listen to in the programme to your farming activities?

……

……

28. Have you implemented the knowledge acquired from the programme(s)?

a. Yes ( ) b. No ( )

29. If yes, to what extend have you implemented knowledge acquired at a scale of 1 – 100%?

a. 1 – 20% ( )

b. 21 – 40% ( )

c. 41 – 60% ( )

d. Above 61% ( )

30. Are there any aspects in them radio programme you wish to be improved?

a. Yes ( ) b. No ( )

31. If yes, what aspects of the programme would you want to be improved?

……

……

32. What radio programme formats do you need in acquiring knowledge?

……

……

33. What other programmes do you listen to on radio stations?

……

……

Thank you for you participation

APPENDIX II: INTERVIEW GUIDE FOR KEY INFORMANTS

Date of interview…….. Name……..

Organization……. County……

Position in the community ……

1. What is the number of farmers you serve?

……

2. How do you mostly communicate agriculture extension information to farmers?

……

3. Have you ever used radio programmes to communicate agriculture information? Yes No

……

4. If yes, what agricultural radio programmes do you involve in?

……

5. What specific agriculture information do you pass out?

……

6. Are the topics addressed in the programme relevant to the information needs of small scale farmers?

……

7. Do farmers actively participate in the programmes? If yes how?

……

8. How satisfied are farmers with the programme(s)?

……

9. What is level of farmer implementation of the knowledge acquired from programmes?

……

10. What are the key radio programme formats preferred by small scale farmers in acquiring knowledge?

……

Thank you for you participation