UNIVERSITY OF NAIROBI

INSTITUTE OF ANTHROPOLOGY, GENDER AND AFRICAN STUDIES (IAGAS)

Challenges women farmers face in accessing Agricultural Extension Services, in Kamugere Sub Location of Embu County

JULIE NJOKI NDWIGA

REG. NUMBER: N69/69390/2011

A PROJECT PAPER SUBMITTED TO THE INSTITUTE OF ANTHROPOLOGY, GENDER AND AFRICAN STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF ARTS IN GENDER AND DEVELOPMENT STUDIES, OF THE UNIVERSITY OF NAIROBI

2014

DECLARATION

I hereby declare that this Project is my original work and has not been presented for the award of degree in the University of Nairobi or any other university

Signature:……Date:……..

Julie Njoki Ndwiga

REG. NO: N69/69390/2011

This Project Paper has been forwarded for examination with my approval as the University Supervisor

Signature:……Date:……

SUPERVISOR: DR. TOM ONDICHO

DEDICATION

I dedicate this Project to my Mother and late Dad.

ACKNOWLEDGEMENT

First and foremost I would like to acknowledge the Almighty God for granting me His mercies and strength throughout the time of study. I would also like to thank my academic supervisor Dr. Tom Ondicho for his guidance and insightful insights, without which this research project would not have been completed.

Table of Contents

Contents

DECLARATION ii

DEDICATION iii

ACKNOWLEDGEMENT iv

TABLE OF CONTENTS v

ABSTRACT viiii

ACRONYMS AND ABBREVIATIONS viii

CHAPTER ONE: INTRODUCTION AND PROBLEM STATEMENT 1

1.1 Introduction 1

1.2 Statement of the problem 2

1.3 Research Objectives 3

1.5 Justification of the study 3

1.6 Scope and Limitations of the study 4

1.7 Operational Definition of terms 4

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK 6

2.1 Introduction 6

2.2 Historical Overview 6

2.3 Agricultural Extension Policies in Kenya 11

2.3.1 National Extension Program I and II (NEP I and II) 11

2.3.2 National Agriculture and Livestock Extension Program (NALEP) 12

2.3.3 National Agricultural Sector Extension Policy (NASEP) 13

2.4 Agricultural Extension Providers in Kenya 15

2.4.1 Public Delivery Systems 15

2.4.2 Private Delivery Systems 16

2.5 Conceptual Framework 19

2.6 Conclusion 19

CHAPTER THREE : RESEARCH SITE AND METHODOLOGY 23

3.1 Introduction 23

3.2 Study Site 23

3.3 Research Design 23

3.4 Study Population and Unit of analysis 24
3.5 Sampling Procedure and Sample Size 24
3.6 Sample Survey ..... **Error! Bookmark not defined.**
3.7 Data Collection 24
3.6.1 Survey Questionnaire 24
3.6.2 Key Informant Interview 25
3.7 Data Processing and Analysis 25
3.8 Ethical Considerations 25
CHAPTER FOUR: DATA ANALYSIS AND FINDINGS 27
4.1 Introduction 27
4.2 Characteristics of the sample used in the study 27
4.3 Farmers who have sought Agricultural Extension Services and challenges faced 28
4.4 Costs farmers are willing to pay for AES 30
4.5 Farming seasons mostly in need of AES 31
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS 32
5.1Summary of findings 32
5.2 Discussion 33
5.3 Conclusion 33
REFERENCES 35
APPENDICES
Questionnaire……37

ABSTRACT

Agriculture is not only one of the most important sources of rural livelihoods in Kenya but also makes vital contributions to the country's economy. Rural women are major agricultural producers especially at the household level. But unfortunately they have least access to agricultural extension services. There are many constraints which are being faced by farm women in attaining access to extension services. To explore challenges women face in accessing agricultural extension services, the present research was undertaken in Kamugere sub location in Embu County. A convenient sampling technique was employed to select the study respondents. Data were collected over a one week period in the month of November 2014 from 30 women small holder farmers. Both qualitative and quantitative methods of data collection were used and analysis was done by using computer Excel software.

The results showed that women farmers' access to agricultural extension services was limited. Among different challenges which hinder women's access to agricultural extension services were cultural constraints, low literacy levels among women, non-availability of female extension staff in agricultural extension departments, lack of local women organizations, violence against women, limited access to credit facilities, less control over resources, social structure, and limited access to market information, mobility and lack of self-confidence. Based on the findings of this study it was concluded that for women to make meaningful contributions in increasing agricultural productivity it is necessary that more AES be provided to women farmers and their accessibility increased. The study suggests that for women to embrace modern agricultural practices there is an urgent need for the challenges identified to be addressed and for further studies to be undertaken involving larger samples. The main weakness of this study is that findings cannot be generalized beyond the sample of 30 women who provided the information used in this study.

LIST OF ABBREVIATIONS AND ACRONYMS

GDP – Gross Domestic Product

AES - Agricultural Extension Services

UoN - University of Nairobi

MoA – Ministry of Agriculture, Food and Agriculture

NEP I and II - National Extension Program I and II

T&V - Training and Visit

NALEP - National Agriculture and Livestock Extension Program

MoALD&M - Ministry of Agriculture, Livestock Development and Marketing

SIDA - Swedish International Development Cooperation Agency

ASIP - Agriculture Sector Investment Programme

CAP - Community Action Plans

FSAP - Farm Specific Action Plans

PRA - Participatory Rural Appraisals

PME - Participatory Monitoring and Evaluation

NASEP - The National Agricultural Sector Extension Policy

CGD - Centre for Governance and Development

EGP - Economic Governance Programme

KARI - Kenya Agricultural Research Institute

KESREF - Kenya Sugar Research Foundation

CRF - Coffee Research Foundation

TRFK - Tea Research Foundation of Kenya

CIMMYT - International Maize and Wheat Improvement Center

IITA - International Institute of Tropical Agriculture

KNFAP - Kenya National Federation of Agricultural Producers

FPEAK - Fresh Produce Exporters Association of Kenya

CGA - Cereal Growers Association

CHAPTER ONE: INTRODUCTION AND PROBLEM STATEMENT

1.1 Introduction

The study aimed to explore the challenges rural women face in accessing Agricultural Extension Services in Kenya. Agriculture is the cornerstone of the Kenyan economy. Besides being the largest single source of foreign exchange earnings for the country, it also produces the bulky of the food consumed locally. Specifically the sector contributes about 25% of the country's Gross Domestic Product (GDP) and accounts for 65 percent of the export earnings and provides livelihood (employment, income, and food security needs) for more than 80 percent of the Kenyan people. In Kenya, as in many other regions of the developing world, women constitute more than 80% of the agricultural producers. While women in Kenya produce more than 70% of the food consumed in the country, they face severe constraints than men in accessing productive resources including markets, credit, education and training, and support services such as agricultural extension services. Closing the gender gap in agriculture would produce significant gains by increasing agricultural productivity, reducing poverty and hunger and promoting sustainable rural development.

Although the participation of rural women in agricultural production at the household level is higher and they spend more time than men in agricultural related activities their work has not been recognized and documented both at the national and international levels. Even though the agriculture sector is increasingly becoming more technologically sophisticated, commercially oriented and globally integrated, women have little or almost no access to agricultural information provided agricultural extension officers. Most of the AESs and programmes that provide training and assistance to small scale farmers tend to target men because they are the household heads. In the process women who constitute more than 70% of the farmers are overlooked. Due to that reason, rural women face a number of constraints which negatively affect their role in agricultural production.

The Kenyan government has identified the agricultural sector as one of the key drivers of Vision 2030, a new blue print for Kenya's development and achieving the Millennium Development Goals (MDGs). Towards this end, various policy measures and programmes have been put in place to increase agricultural productivity and production. One of these measures is the provision

of AESs to farmers so as to help them to optimize their use of limited resources available to enhance agricultural productivity and food security in the country. The main aim of agricultural extension services is to provide small scale rural farmers with the latest information and agricultural technologies to both the gender (male and female) at their door steps in order to eradicate poverty and hunger through sustained growth in the agricultural production. But rural women who are the major contributors to agricultural production face many problems and challenges in accessing extension services. This study was therefore designed to find out challenges women in Kamugere sub location of Embu County faced by farm in their quest to access AES.

1.2 Statement of the problem

Women in Kenya constitute a majority of smallholder farmers providing most of the labor and managing a large part of the farming activities on a daily basis (Saito et al. 1994). The problem is that in spite of their central role in agricultural production, they face numerous constraints and challenges in accessing support services, especially Agricultural Extension Services (AES) that are offered by the state and/or private organizations. Yet, Agricultural Extension Services play an important role in disseminating agricultural information on new technologies and research aimed at improving agricultural productivity. Increased productivity is important in promoting household food security, improving incomes and reducing rural poverty. (IFPRI, 2009).

However, women face numerous challenges in their quest to access AES. These range from insufficient funds for supporting public extension, poor resourcing, disorganized structures resulting in poor infrastructure for attracting businesses, limited involvement of women farmers in extension processes, lack of appropriate strategies for effective research and adequate extension methods. Limited coverage of extension services across rural regions and challenges in adapting technology packages to community-specific contexts have also been highlighted as critical issues in the delivery of EAS (IFPRI, 2010). Thus, this study sought to understand the challenges women face in accessing AES in Kamugere sub location of Embu County.

1.3 Research Objectives

The main objective of this study was to investigate, document and highlight the challenges women smallholder farmers in Kamugere sub location face while accessing AES. The following specific objectives were identified:

1. To assess the experiences of women while accessing AES in Kamugere sub location.
2. To describe the effect of the challenges that women face in accessing and using agricultural extension services in Kamugere sub location.

1.4 Research Questions

The study sought to answer the following research questions:

1. What are the experiences of women farmers in accessing AEs in Kamugere sub location?
2. How do the challenges women face affect their access to AES in Kamugere sub location?

1.5 Justification of the study

There were a number of practical reasons for doing this research. At this time when food production in the country is declining and cannot adequately feed the growing population, there is an urgent need to look into the constraints of those who produce food (in our case women) face in accessing support services mainly AES. Identification of the challenges women farmers face in accessing agricultural extension services will be a first step towards addressing them and thereby increasing agricultural production. While strategies to encourage African agriculture must be multi-faceted and must face varied facets of the farming systems, in Kenya like most sub-Saharan countries, the focus must be on the needs of women farmers who are currently the major food producers.

However, their productivity will be determined by how much access they have to support services such as AES and other necessary resources. The objectives of AES are to help farmers raise productivity and increase the income of poor people in the rural areas. AES should therefore be available to both men and women. However, women unlike men face numerous challenges in accessing AES services thus negatively affecting their role in agricultural production. It is therefore critically important to highlight the challenges women face in accessing AES and generate suggestions and ideas, which may bring about benefits and possible

changes, least of which is increased potential of women in agricultural production. This in turn will benefit the while country.

The study was also justified in the sense that it has generated empirical data that not only fills the gaps in knowledge and literature on this important issue but also useful information that will be of interest to many different types of stakeholders in the agricultural sector. These include: policy makers, development workers, county government and academicians. Unlike most of the other previous studies, this is among the first ones to be conducted by a gender expert and in a Gender and Development studies department. Thus, it brings out new and welcome perspectives on this under researched field of study.

1.6 Scope and Limitations of the study

This study was confined to women farmers from Kamugere sub-location, Kagaari North, Embu County. This research was limited to 30 adult women directly involved in small scale farming. The research aims to gather the real life experiences of women in accessing AES.
The following problems were encountered in the course of the study.

- There exists no known register of all women who are small scale farmer in Kamugere. The study therefore is limited in drawing up a representative sample.
- The findings of this study cannot be generalized to all women farmers in Kenya

1.7 Operational Definition of terms

Gender - refers to the socially constructed roles and status of women and men, girls and boys. It is a set of culturally specific characteristics defining the social behavior of women and men, and the relationship between them. Gender roles, status and relations vary according to place (countries, regions, and villages), groups, generations and stages of the lifecycle of individuals. Gender is, thus, not about women but about the relationship between women and men.

Agricultural Extension Services - the application of scientific research and new knowledge to agricultural practices through farmer education. The field of 'extension' now encompasses a wider range of communication and learning activities organized for rural people by educators from different disciplines, including agriculture, agricultural marketing, health, and business studies.

Empowerment - refers to the capacity of people – both women and men – taking control over their lives by setting their own agendas, gaining skills (or having their own skills and knowledge recognized), increasing their self-confidence, solving problems, and developing self-reliance. It is both a process and an outcome. Empowerment implies an expansion in women's ability to make strategic life choices in a context where this ability was previously denied to them.

Discrimination - The practice of treating a particular group of society less fairy than others due to their race, sex or faith. In the study discrimination was refer to unfair treatment to women due to their sex.

Equality - The fact of being the same in rights, chances, status and advantages.

Factors - One of the several things that cause or influence the ability of women farmers to access AES.

Influence - Something that affects the outcome. In this regard it refers to the effect that some factors to be identified affect the access of AES by women farmers

Control – Women farmers' ability to decide what they do with the resources under them

Status - The social or professional position of women in relation to men. In this regard it refers to the number of women in top position in comparison to men in the same positions.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This section of literature review will be discussing the development of Agricultural Extension Services in Kenya, policies that guide provision of the services as well as the various provider of Agricultural Extension Services in Kenya.

2.2 Historical Overview of AES in Kenya

The agricultural extension system in Kenya has evolved through various stages since the colonial and post-independence eras. During colonial times, Agricultural extension services were mainly tailored to cater for settler and commercial farming systems. These were well-packaged programs that combined extension services with credit and subsidized inputs. However, the extension approach used for indigenous Africans, who were mainly engaged in subsistence farming and pastoralism, was coercive in nature and therefore not readily accepted. Agricultural extension in Kenya has been evolving in tandem with the changing theories of development. Early extension models followed an approach to new technology through state–provided extension services (McMillan et al., 2001).

Until 1965, technologies were developed and run through extension pipeline to farmers, with agricultural development being the desired product. This was a top-down approach, where information originated from the Ministry of Agriculture and filtered down to farmers through extension agents. The system was not accountable to farmers. Hence, farmers were not involved in development of the disseminated technologies. Research and extension systems were focused mainly on large-scale farms or smallholders in high and medium potential areas. Trials and demonstrations were mostly undertaken in research stations (Davis and Place, 2003).

In order to reinforce technology transfer, the Kenyan Government put in place new models in the 1960s focusing on the needs of small-scale and resource-poor farmers, leading to the introduction of the farming systems approach. The Farming Systems Research and Extension (FSR/E) model was introduces in 1965 and it operated up to 1980.

This approach was characterized by participation at farm level by farmers and extension staff through farmer input in on-farm trials, interdisciplinary linkages and a systems approach to agricultural extension services delivery (Collinson, 2000). The distinctive feature of the FSR/E model was its three-way linkage between farmers, researchers, and extension service providers.

Holistic and interdisciplinary in its focus on total systems, FSR/E took into account the multiple goals of the farm family as well as the economic and resource situation in which the farm operates. When we consider the time dimension within which the family makes decisions and plans for the future, the long-term sustainability of production and profit became central to system design (Francis and Hildebrand, 1988). The participatory nature of FSR/E enhanced the capability of research and extension organizations to incorporate farmers' goals, resources, concerns with their own future and their experience into the technology generation and diffusion process. These characteristics influenced the production environments, and the farming systems, found on different farms.

It is because of the diverse nature of these environments, including sustainability of production vs profit, and varying levels of farmer education, that technologies need also to be diverse. The FSR/E methodology recognized this need. In responding to the concerns for a more sustainable agriculture, more emphasis was placed on developing genetic materials and farming practices that fit within the biophysical and socioeconomic environments of different farming systems. This was based on a fuller understanding of these environments and in on-farm research to evaluate technology by environment interactions. This in turn depended on enhanced multidisciplinary, another of the basic facets of FSR/E methodology. The most notable success of this mentioned pioneer agricultural extension model was in the dissemination of hybrid maize technology in the late 1960s and the early 1970s.

However, this extension model had some deficiencies which included a mix of ad hoc project components and an inconsistent national strategy. Overall, this model was expensive and ineffective. Additionally, despite a well-established line of command down to the frontline extension worker and staff numbers presumed to be adequate at the time, the agricultural extension services were judged to be performing below its potential (Gautam, 1999).

This model did not, in addition, pay any attention to the needs women had, although they, women, made up almost one-third of the farmers, and although most farmers, 81%, were small holders, extension services largely focused on men, who owned the large scale farms. In addition, the FSR & E model did not take into account the unique needs, challenges and capabilities across the different gender groups and the gender concepts were not fully integrated in technology development and dissemination processes, leading to obvious gender inequalities in farmer representation in areas such as stakeholder fora, research advisory committees, field days, demonstrations and exposure tours.

Women farmers were still operating under greater constraints than men as they had less access to information, technology, land, inputs and credit. Their multiple roles also constrained their time and mobility with a higher proportion of them being illiterate and engaging in subsistence agriculture without being up to date with current technologies. Traditionally, agricultural extension strategies in Embu have been similar to those offered in Kenya, generally. They have focused on increasing production of cash crops by providing men with training, information, and access to inputs and services. This male bias has been demonstrated in farmer training centres, which are established to provide residential training on technical subjects. Like most other locations where farmer training is conducted, they do not provide separate washing and sleeping accommodations for men and women, which has prevented women from attending many trainings at the centres. Further, extension services from the Government were and still are staffed predominantly by men as there are probably not enough qualified women who are able to take up these positions at the field level.

Men officers have assumed that farmers are men and so they reach out to only men farmers and on other occasions, these men officers are not allowed to come close to women, which has left out the women farmers from accessing the AES being offered. In channeling Extension Agricultural Services in a manner that is more likely to address the needs of both men and women farmers, groups have been one of the best channels to reach women farmers. The definition of membership criteria for admission to many of these organizations has limited women's ability to reach the extension services availed.

Largely, membership criteria relies on reserving access to land owners or heads of households and women have largely not been eligible for admission to these organizations. Other criteria, such as age, education, or civil status, have also excluded women from becoming members. The few times women are able to participate in groups, gender norms have impeded them from voicing their opinions and needs in the presence of men.

In addition, most extension service providers, as guided by the Government's curriculum, have assumed that home economics services can substitute for agricultural training and information for women. From research carried out, where home economics services have been provided, female home economists work almost exclusively with rural women, thus reinforcing the institutionalization of gender bias. Home economics services are far from universal and have poorly been resourced, although some have struggled against the odds to provide farm women with technical information and training. (Aidoo, 1988). This assumption that women do not require technical information of agriculture and only need home economics, has thus, led to the AES reaching out majority of men and ignoring the AES needs of women farmers.

Many models put in place by the Government after 1980 to reach farmers, such as the T&V System, emphasized the selection of contact farmers as a mechanism for passing on information to other ("follower") farmers in their area. The recommended selection criteria, such as title to land, literacy, or cooperative membership, as well as male extension staff's assumptions about women's roles in farming, largely excluded women's involvement and they were therefore, not able to access the available AES (Aammink & Kingma, 1991). The general criteria laid down for selecting contact farmers and adapted by most extension providers in Embu for transfer of agriculture extension includes a farmer should represent the local range of farm size, cropping pattern, socioeconomic condition; be regarded by other farmers as worthy of imitation; be a practicing/ an active farmer; be willing to adopt extension recommendations on at least part of their land, allow other farmers to observe the new practices and be willing to explain these to other farmers.

In practice, extension services have commonly been added other criteria such as a minimum landholding size, literacy and ability to purchase inputs. Village chiefs and other formal leaders, are typically men and field extension agents, are almost always men, usually make the selection, which introduces other potential biases against women, excluding a majority of women from accessing the Agricultural Extension Services available.

The adjustments to selection criteria and the selection process that have proven to be useful in Kenya in increasing the percentage of women selected and are also currently practiced in Embu. They include encouraging chiefs and other leaders to promote women's selection at local meetings and in the media, stressing the importance of selecting women farmers in extension training courses and emphasizing selection on merit from among those who are actually doing the work (Saito & Weidemann, 2000). Other obstacles that have limited women's access to AES have been as a result of many EAS not accounting for women's lack of time by identifying strategies for disseminating agricultural information at times and in places convenient to women.

Extension officers are rarely conscious of the times when women are available for meetings to schedule training at those times. When this has been done, trainings have not been divided into short modules to accommodate women's schedules and provide women with the ability to attend meetings and still manage their day-to-day tasks. Strategies such as working with women on their own plots or on plots close to their homes to reduce time spent traveling as well as subsidizing the cost of taking transportation to training, have been proven to facilitate women's ability to participate in such events. In Kenya the gender gap in adult literacy ranges from 7 to 24%. Roughly 70 percent of young women and 79 percent of young men are literate in Kenya.

One of the strategies developed to reach farmers in Kenya with extension services is Information and communication technologies (ICTs), which is a major contributor to extending the reach of extension services into diverse populations. Women lack adequate control and access to financing to pay for ICTs such as mobile phones, which is worsened by their higher levels of technology and language illiteracy, these norms discourage women from using technology.

2.3 Agricultural Extension Policies in Kenya

Research has showed that agricultural policies affect men and women differently due to gender inequalities in access to and control of economic and social resources, information and decision-making. Despite the fact that women grow half of Kenya's food, a survey conducted by Food and Agriculture (FAO) indicates that 95 percent of agricultural extension services in the country are beneficial to men, and this biasness has been encouraged by policies in place that have not been keen on gender equity in agricultural extension services. The main policies that have been developed to guide extension service delivery in Kenya include NEP, NALEP and NASEP.

2.3.1 National Extension Program I and II (NEP I and II)

This Policy was operational from 1982 to 1998 with the objective of developing institutional arrangements that would facilitate delivery of agricultural extension services to smallholder farmers efficiently and effectively, through development of a cadre of well-informed, village-level extension workers who would visit farmers frequently and regularly. The role of the extension officers was to provide relevant technical messages, and bring farmers' problems to the attention of researchers. (World Bank, 1999).

The extension staff were to receive regular training with much improved research extension linkages. NEP I and II led to the development of the Training and Visit (T&V) agricultural extension system. The system had been used successfully in Turkey and India, and Kenya was the first African country to apply this model (Farrington, 1998). T&V was funded in two phases, under the National Extension Program (NEP) I and NEP II. The T&V model expanded to cover about 90 % of the arable land in Kenya and used contact farmers to multiply their effects. The T&V model suffered because of poor project implementation arrangements, weak management and inadequate budgetary allocation, leading to persistence of problems experienced with earlier extension models. The National Extension Program I and II did not have any mention of gender and all gender related dynamics and gaps were left untouched.

2.3.2 National Agriculture and Livestock Extension Program (NALEP)

The inherent weaknesses of NEP I & II led to formulation of National Agriculture and Livestock Extension Program (NALEP) by the Ministry of Agriculture, Livestock Development and Marketing (MoALD&M) and Swedish International Development Cooperation Agency (SIDA). The positive aspects of NALEP were its wide coverage, strong staff training giving a strong frontline extension worker force, coupled with professionalism developed at the district-office level. NALEP as a policy framework was designed to assist the implementation of the National Agricultural Extension Policy (NAEP). NAEP was structured to bring on board both public and private service providers, as a way of finding means of addressing the complex, systematic issues that faces rural communities.

This shift had been agitated by the recognition of the socio-economic and agro ecological conditions of resource poor farmers as being complex, diverse and risk prone (Farrington, 1998). This strategy based on the Agriculture Sector Investment Programme (ASIP) concept, has been aimed at generating sustainable development in the agricultural sector through a more integrated and holistic approach (Kenya, 2001b).

The National Agriculture and Livestock Extension Program is built on a partnership concept that entails deliberate investments and participation of various stakeholders in the agricultural sector. For example, beneficiary communities develop Community Action Plans (CAP), Farm Specific Action Plans (FSAP), and also participate in extension improvement through Participatory Rural Appraisals (PRA) and Participatory Monitoring and Evaluation (PME).

It also endeavors to make extension demand driven, increase efficiency in extension service provision, putting in place alternative funding apart from the exchequer, promoting gender issues and curbing environmental degradation. To be able to achieve this, NALEP has been organized around three core functions, i.e. (i) research (ii) extension and (iii) advocacy. Advocacy was to add value to the two other core functions by way of creating demand on the part of farmers for specific kinds of support, rather than technical and extension support for its own sake. The re-organization of agricultural extension services in Kenya provides an example of decentralization in a difficult context, partly due to lack of a comprehensive institutional framework to guide the process as well as the content.

NALEP considers gender issues as important in agricultural extension and has highlighted certain measures to be incorporated in extension service provision including influencing development and disseminating gender-sensitive technologies and interventions, linking extension clientele with other stakeholders on education and awareness creation on different rights as well as change of attitudes on gender relations in the community, influencing mainstreaming of gender issues in schools and training institutions curricula, targeting the youth, in and out of school, to help mould them as future farmers and agri-business entrepreneurs and identifying as well as targeting vulnerable groups among clientele such as the disabled, orphans and resource-disadvantaged in extension messages and outreach programmes.

Despite the many gender highlights of NALEP, implementation of the Program recognizing gender issues has not been carried out and these gender proposed measures have remained more on paper, than at implementation level.

2.3.3 National Agricultural Sector Extension Policy (NASEP)

The National Agricultural Sector Extension Policy (NASEP) came into place in June, 2012 with a sector-wide approach and addressed key sectoral issues in the delivery of extension services. Tis policy gives guidelines on addressing and devising funding modalities, packaging of technologies, technical capacity building and research–extension–farmer linkages, and application of ICT in general. It also offers guidance on the role of the private sector and its modalities of providing extension and other auxiliary services.

The main aim of developing NASEP included guiding providers on retaining the provision of extension services for smallholders within Government with gradual privatization to complement the retained public extension service, advising on surveillance and control of notifiable diseases and disease and pest outbreaks as part of early warning system, restructuring and reforming public extension systems to facilitate multi-stakeholder participation, facilitating the development of stakeholder-operated market information system and facilitating capacity building of Extension Service Providers. This policy offers specific guidelines stipulating Extension Service Provision and Organization including the role of Government in Extension Service, involvement of ICT development, Privatization and commercialization, financing as well as decentralizing and planning process of the same.

It also indicates that extension service delivery is affected by a number of cross-cutting issues, such as sustainable environment, gender, youth, HIV/AIDS, drug abuse, human rights, water resource use, natural resource management, and conflict mitigation. With regard to this, the policy indicates that ESPs was disseminate gender sensitive technologies and interventions and influence development of gender sensitive technologies.

Despite the efforts to reach small holder holders in Kenya majority of whom are women, through the guidelines offered by the above policies, particularly NASEP which has so far been the most extensive, agricultural extension service delivery in Kenya has remained gender biased. As a result, the Centre for Governance and Development (CGD), under NASEP, through the Economic Governance Programme (EGP), developed the 'Engendering the Provision of Agriculture and Livestock Extension Services in Kenya' Project. One of the objectives of this project was to analyze the National Agriculture Sector Extension Policy (NASEP) and its existing and proposed implementation frameworks, to come up with policy recommendations that would promote gender sensitivity in the provision of extension services. (GOK, 2012).

The gender findings in the project detailed key challenges that constrained increased agricultural production; domination of the agriculture sector by approximately three million small scale farmers, of whom 69% were women, provision of 80% agricultural labour force by women and not giving attention in formulation, design, and implementation of agricultural development programmes, to gender issues. The recommendations of this project led to incorporation of gender mainstreaming in the Ministry of Agriculture in 1999 after the Ministry of Agriculture and Livestock Development (MOALD), (GOK, 1997).

A second study conducted under Agricultural Sector Investment Programme, (ASIP) in 1998 focused on setting up an institutional framework within the Ministry to address gender imbalances in agricultural extension programs. The study recommended a gender approach to agricultural development, through mainstreaming gender issues in the Ministry's programmes, projects and activities.

It was out of these studies that the gender unit, currently the Gender Section in Extension Services Division was formed. Its key function is to spearhead gender mainstreaming in the Ministry's policies, programmes/projects, procedures and systems. Despite the many existing

gender gaps many years on, through the Gender Section in the Extension Services Division, challenges women face in accessing AES in Kenya continue to be brought out, well understood and measures to address these gaps are continuously developed.

2.4 Agricultural Extension Providers in Kenya

Different types of agricultural extension organizations and services are available in Kenya, but these can be classified into distinct institutional models including general, government-sponsored extension services; extension services within crop-specific programs; extension services within integrated rural development projects and extension services within programs specifically for women.

2.4.1 Public Delivery Systems

The Public delivery of extension is offered by the Government, implemented by the Ministry of Agriculture and supported by the Government of Kenya (NALEP-GoK) and Swedish International Development Agency (NALEP-Sida). It aims at enhancing the contribution of agriculture and livestock to social and economic development and poverty alleviation by promoting pluralistic, efficient and demand-driven extension services to farmers and agro-pastoralists (Muyanga and Jayne, 2006).

The major Institutions providing extension/advisory Services under the Public delivery in Kenya include several broad forms of delivery systems, based on modes of delivery and funding (Anderson and Van Crowder, 2000). They include; Public Research and Education Institutions such as Kenya Agricultural Research Institute (KARI), Kenya Sugar Research Foundation (KESREF), Coffee Research Foundation (CRF), Tea Research Foundation of Kenya (TRFK), ASTI Agricultural Research and Development Investments & Capacity in Kenya, Kenyatta University - Center for Entrepreneurship and Enterprise Development as well as International Organizations such as International Livestock Research Institute and GIZ – Promotion of Private Sector Development.

The Public Delivery System suffered various challenges including inadequate fit between the needs of different categories of farmers and the advice given or messages supplied; developing demonstrations that have limited applicability for the majority of farmers; biased contact-farmer

selection; concentration on irrigated crops to the detriment of natural resources management, rain-fed agriculture, and livestock production as well as bad management routines including a lack of encouragement, incentives, or sanctions that go unchecked for long periods of time at times. These have been primarily caused by a lack of farmer control over research and extension.

The Kenyan Public Delivery System has attempted to be gender inclusive by including women farmers in developing and transferring technologies, but has not succeeded as there is a lack of commitment from those in charge and policies are not articulate on how gender should be addressed. This has led to public system that is unaware of the challenges women farmers face in the country and so these gaps have remained unresolved.

Because of the generic structure of the Public Delivery System, this system has not paid any attention to the different extension needs of women farmers and the challenges facing women farmers in accessing Agricultural extension Services, have not been addressed. This system has been oblivious of the education challenges women face as well as the limitations women face on accessing resources that may enable them access the Agricultural Extension Services such as title deeds and other requirements necessary to be part of groups where these services are offered.

The public system also continues to be biased on the extension officers it employs, who are mostly men, thus, enforcing the obstacles caused by the contact between men and women, which are largely cultural.

2.4.2 Private Delivery Systems

As a result of flaws in the public extension system, a second type of extension service has emerged - the privatized agricultural extension initiatives provided by private companies, non-governmental organizations (NGOs), community-based organizations (CBOs), and faith-based organizations (FBOs). This is private extension with little or no government participation. The Private Delivery Systems have aimed to be more accountable by improving the policy framework for agriculture and agribusiness, strengthening implementation capacities for value chain development and by promoting development and dissemination of resource-friendly technologies.

The Private Delivery Systems are keen on addressing aspects of gender in the projects, as they normally offer agricultural extension in form of development projects, which have, at times, gender plans, articulating how the needs of both men and women farmers was be addressed. Private Delivery Systems are mainly provided by NGOs and Farmer Based Organizations.

NGOs and other donors.

The majority of NGOs have extension staff trained in relevant agricultural disciplines. Most of these NGOs rely on the government research institution such as KARI for technology and others have established links with private companies as well as international research centers such as International Maize and Wheat Improvement Center (CIMMYT), International Institute of Tropical Agriculture (IITA),International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), amongst others.

However, following the structural adjustment programs of the 1980s and 1990s, donors became interested in NGOs since they were private entities. This shift in development thinking strengthened the move towards decentralization and privatization, resulting in more attention being given to NGOs, who now play a major role in delivery of extension services in Kenya. NGOs presently offer Agricultural Extension Services and they mostly target small holder farmers, majority of whom are rural women and men. This source entails outsourcing the responsibility for extension delivery to private sector providers, e.g. Non-Governmental Organizations (NGOs) and Community Based Organizations (CBOs).

Provision of Agricultural Extension Services through the NGOs and other donors has emerged as an important pathway, with several comparative advantages over all the other channels, including grassroots contacts and use of participatory methods. (Hangrave, 1999). The mode of delivery by NGOs and other donors has been favored by majority of farmers as their services are free and if not, a very subsidized fee is required, unlike the Public system from the Government, whose delivery is demand based, and farmers must pay a fee for the service.

Farmer Based Organizations and Cooperatives. Farmers have the tradition of organizing themselves at local level into membership-based entities (associations, cooperatives). In Kenya, farmers have organized themselves in groups to facilitate ventures such as the marketing of agricultural output, mutual help assistance and acquisition of agricultural credit as well as accessing various other services they require in their farming activities, including Agricultural Extension Services, which are provided during group meetings.

These groups was either invite Agricultural Extension Services' experts who then talk to the members at one point and the members can learn on any agricultural aspect they are interested in, they also invite successful farmers to share with the rest of the members on certain extension aspects. They are successful at sharing Agricultural Extension information as they are easily accessible and very affordable. Many development organizations try to build on these local institutions to carry out their agricultural extension work in the community. The work groups are common in many parts of Kenya, and are known by several names, including Saga, Ngwatio, Bulala and M'wthya. (World Bank, 1999)

They are used by NGO and other partners to promote and share new farming and conservation practices, in the form of Agricultural Extension Services. Using community groups is a form of farmer-to-farmer extension, as farmers learn a particular innovation and share their knowledge and skills with other farmers. Farmers are generally enthusiastic to share their skills with other farmers. Extension cannot be expected to reach every farmer - hence, the need for selectivity and reliance on farmer-to-farmer dissemination (World Bank, 1999).

The Kenya National Federation of Agricultural Producers (KNFAP) is the largest farmers union in Kenya whose mission is to "empower its members to make informed choices for improved sustainable livelihoods". Other farmer organizations that provide some agricultural information and services to their members include Fresh Produce Exporters Association of Kenya (FPEAK), Kenya Flower Council, Cereal Growers Association and Co-operative Societies.

2.5 Conceptual Framework: Innovation diffusion theory

This study will be guided by The Innovation diffusion theory, which was developed by Rodgers (1962). The theory explains how, over time, in idea or product gains momentum and diffuses/spreads through a specific population.

In 1928, a seemingly small event occurred that provided the basis for a theory that has influenced how the Extension Service has conducted its programs for the past eight decades. Hybrid corn was released to farmers USA and with its yield advantages over traditional corn varieties and promotion by the Extension Service and commercial seed companies, the seed was quickly adopted. Between 1933 and 1939, the number of acres planted to hybrid corn increased from hundreds to thousands. By 1940, it had been adopted by most American corn growers. (Ruttan, 1996).In 1941, Bryce Ryan, a professor of sociology at Iowa State University, received funding to examine the spread of hybrid corn. He assumed that a better understanding of the hybrid corn diffusion process would help disseminating other innovations developed by the station (Ruttan, 1996).

The study revealed that the adoption process began with a small number of farmers who adopted hybrid corn soon after it was released. From these farmers, the innovation diffused to other farmers. In addition, it revealed that the most influential source of information on this innovation was neighbors. When farmers saw and interacted with farmers who had adopted hybrid corn, they adopted it too. These findings implied that if innovative farmers were targeted to adopt innovations, other farmers would soon follow, speeding up the adoption of agricultural practices. The idea was compelling, and it provided the basis for a model of agricultural development that the Extension Service continues to use, all over the world.

This study was followed by studies that examined various aspects of the innovation diffusion process. These studies in theory are closely associated with the agriculture revolution in the United States. From the 1940s through the 1960s, researchers plotted mathematical curves representing the adoption of agricultural innovations, developed categories of adopters, catalogued the characteristics of adopters and innovations, and examined the influence of farmer

interaction on the adoption process. The established principles of the Innovation diffusion theory were established to include;

1. **Categories of Adopters**

Literature describes farmers who seek AES as being different from other farmers. Innovators are younger (Lionberger, 1960), more cosmopolitan (Coleman, 1957), have higher incomes than later adopters (Lionberger, 1960), and have the largest operations of all adopter categories (Coleman, 1957). In addition, adopter categories differ in their source of information on innovations, with innovators relying on primary sources and later adopters relying on word of mouth (Ryan & Gross, 1943).

2. **Characteristics of Innovations**

Key part of the seeking for AES is identifying the services offered. The AES advice sought has to have a relative advantage over the old practice (Rogers, 1971) and it has to be consistent with existing cultural patterns (Barnett, 1953). In addition, researchers have identified a number of other characteristics of framers that relate to their interest in AES. AES that are less complex, are divisible, readily observable, low cost, and profitable are sought quickly (Bohlen, 1961).

3. **Stages of the Adoption Process**

The Innovation diffusion theory, as described by Beal, Rogers, and Bohlen (1957) developed a sequence of stages to describe the adoption process, involving both the adopters, the farmers and the innovators, the extension officers.

Awareness-The farmer knows of the existence of the AES but lacks details. In this study, we are presuming that the women farmers do not usually have adequate information on existing AES

Information-The farmer becomes interested in the AES offered and seeks further information. If the women farmers do not have adequate information on existing AES, then they was not be interested in the innovation

Evaluation-The farmer takes the AES information offered and weighs the alternatives regarding costs, labor, accessibility and management ability.

Trial-The farmer uses the AES sparingly depending on how available they are and if they prove consistent and value adding they seek for more.

2.6 Conclusion

Further to Kenyan women farmers being limited to fully access Agricultural Extension Services, they receive 10% of the credit awarded to small holder farmers and only 1% of the total amount of credit directed to agriculture (FAO 2008).

In addition, more than 40% of all small scale farms are operationally managed by women and youth (Kimenye 1999), yet women hold only 1% of the registered land titles in Kenya (5-6 % of registered titles being jointly held. Most standard forms of extension delivery channels exist today in Embu, sometimes all in a single geographic area interacting in a variety of ways with other economic and institutional factors to influence households' decisions.

However, in some cases, there has been a tendency to replicate a particular approach across different agro-ecological zones and lack of skilled extension agents has led to piece-meal extension service delivery to clients usually faced with multiple problems. This has in many cases resulted in low rates of technology adoption. (MOA, 2008).

Literature shows that when extension services target food crop components, the number of women farmers that are reached by such services is limited. The mechanisms currently used by most extension services for providing technical advice to farmers include; the contact farmer approach, the use of farmer training centers, reliance on private sector efforts, and the large group approach of mass media or demonstrations- most of which tend to channel services to those who have the greatest access to certain means and resources important to production.

Women farmers, who are more likely to be involved in subsistence production with generally smaller land holdings and less access to other resources, are therefore not typical of the clientele served by many agricultural extension programs. Other characteristics of women farmers in Kenya as proven by literature reviewer herein, such as their relative lack of education, their limited control of land in their own names and their dual responsibilities for both household maintenance and subsistence or market production, serve to limit their participation in agricultural extension programs that operate with the standard delivery mechanisms.

In addition, agricultural extension strategies traditionally have focused on increasing production of cash crops by providing men with training, information, and access to inputs and services. This male bias has been illustrated in farmer training centers, which have been established to

provide residential training on technical subjects. In spite of this overwhelming information on women's contribution, men have continued to get more opportunities to participate in extension activities while women have remained at home offering labour services in the farm and caring for the family. This has been worsened by training time schedules and packages in extension activities that take no account of women's multiple roles.

Besides, very few women at professional and farming levels have been involved in influencing the formulation and management of agricultural polices/programmes and on resource use and benefits. The Ministry of Agriculture is committed to giving efficient service delivery to all male and female farmers and clients of diverse socio-cultural and socio-economic - gender groups. The Strategic Plan of the Ministry recognizes that sustainable development of agriculture should recognize the key role of women in production and marketing of agricultural products, and that interventions in agricultural development are most likely to affect men and women differently. (FAO, 2006)

In summary the review indicates that farming is dominated by smallholders, majority of who are women (ASIP, 2008) and AES are male dominated and therefore women's issues/needs have not been fully understood or addressed.

CHAPTER THREE: RESEARCH SITE AND METHODOLOGY

3.1 Introduction

This chapter aims to explain the research methodology and methods I used to collect and analyze my data in order to illuminate the challenges women in Kamugere encounter in accessing AES as was be presented in the subsequent chapters of this research report. The chapter begins with a brief overview of the study site followed by brief description of my research design. The other subsections include study/target population, sampling procedures and sample size, methods of data collection, data analysis and a description of constraints and limitations of the study

3.2 Study Site

This study was carried out in Kamugere Sub Location in Kagaari North Location of Embu County. Embu County lies 120 kilometers north east of Nairobi, on the south-eastern side of Mount Kenya. The county covers an area of 2,818 square kilometres and borders Tharaka Nithi to the North, Kitui to the east, and Machakos to the south, Murang'a to the south west and Kirinyaga to the West.

Kamugere sub location was chosen for this study because most of the local residents are small scale farmers. The small scale agriculture is family based and the family controls the mean of production. However, ordinarily it is women who do much of the cultivation and provide most of the agricultural produce used for home/household consumption and sometimes, surpluses are sold in the local markets to earn cash for sugar, cooking oil and other household needs. Kamugere has potentially arable land. Traditionally given to subsistence farming however recently cash crops such as tea and coffee are increasingly being grown. This has led to the intensification of agriculture and changes in farming practices and use of land for a majority of women in the area. These changes have created an ever- increasing demand for support services such as agricultural extension services to assist the women to boost production.

3.3 Research Design

The study adopted the descriptive survey research design to study the challenges women in Kamugere sub location face in accessing Agricultural Extension Services. A descriptive survey research design was thought to be the most appropriate as the purpose of this study is to provide a detailed description of the challenges women face in accessing AES.

3.4 Study Population and Unit of analysis

The study population comprised all women (married, widowed, separated or divorced women) farmers in Kamugere sub location whose main occupation is farming. The unit of analysis was the individual woman who lives in Kamugere sub location and undertakes farming.

3.5 Sampling Procedure and Sample Size

It proved rather difficult to establish the actual study population owing to the absence of a register of all women farmers in Kamugere sub location. Thus, the study dealt with a population of unknown parameters which together with time and financial constraints necessitated the selection of a sampling procedure that was easy to use. In the prevailing circumstances convenient sampling procedure was considered the most appropriate sampling technique for this study. By this method it was possible to interview only women who were easy to locate and willing to participate in the study. A sample of 30 women smallholder farmers was drawn using convenient sampling procedure. The sample is enough to enable use draw conclusions about the challenges women in Embu County, face in accessing AES.

3.6 Data Collection

The data used in this study was collected over a one week period in the month of October 2014. With the knowledge that the study site was mainly agricultural and the assumption that most women were farmers, the researcher had to visit their homesteads in the morning when they are involved in their daily routine farming activities. In this way it was easy for the sampled women to respond to questions relating to their farming activities and the AESs support they received to enhance their production.

3.6.1 Sample Survey

The main method for primary data collection was a sample survey questionnaire (Appendix 1). The questionnaire combined structured open and closed ended questions. Face to face questionnaire interviews were done by the researcher who read out the questions to individual women farmers in the study sample and recorded their responses. Face to face interviewing was meant to give the researcher a chance to explain or rephrase questions that were not well understood and make probes where necessary.

3.6.2 Key Informant Interviews

Apart from the questionnaire, the researcher also interviewed a few key personalities in the agricultural sector, civil society organizations and community development workers who worked directly with women farmers in various aspects. These included: the sub-county agricultural officer, one civil society representative and one agricultural extension officer.

3.6.3 Secondary Sources

The researcher also made extensive use of the existing literature and findings from studies conducted on this and other related topics. The relevant information formed part of the literature review presented in chapter 2. The available data was also subjected to thematic analysis and then used to supplement the data obtained from the questionnaire method.

3.7 Data Processing and Analysis

The first step in data analysis was to clean up the data and check the data for accuracy and completeness. With the help of a data analyst, quantitative data was entered into a computer using MS Excel and developing a database structure that integrated the various issues under investigation. The excel computer package was used to create codes and tables that were used to enter and analyze the information. Frequency table and percentages were then produced and these have been used in the section on data presentation in the subsequent chapter. Qualitative data was subjected to thematic and content analysis and has also been used to support core argument in this study.

3.8 Ethical Considerations

According to Crandall et al (1978) ethical principles on social research and transgressions of the principles revolve around four issues namely: harm to participants, lack of informed consent, and inversion of privacy and deception of participants. The researcher upheld these principles in the following ways:

1. Before data collection the researcher explained to the participants the aims of the study and then invited them to ask any questions that were not clear before they were asked for their informed consent.
2. The respondents were assured that the information given will be kept confidential and that their names will not be included in the final report.

3. Throughout the proposal and report writing stages, the researcher has avoided plagiarism and attributes appropriately the information taken from secondary sources. The findings are reported as accurately and truthfully as possible in order to avoid fraud.

3.9 Problems Encountered in the Field

In the process of the research for this report, the researchers encountered a number of problems some of which are worth mentioning. One the problems encountered was interrupted interviewing schedules. Sometimes guests came or neighbors passed by to say hello. We had to pause the interview session and in one or two instances it was not possible to continue as the guests stayed longer and I had to cancel and move on to another respondent. The researcher also faced time and financial constraints which made it impossible to interview a large sample of women farmers. Poor weather conditions limited the areas that the researcher could cover within the short duration of data collection.

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter analyses the data collected. It also presents and discusses the findings of the study. The questionnaires were pre-tested and analyzed by use of descriptive statistics and advanced statistics. Tables, bar graphs, pie charts and percentages were used in report presentation.

4.2 Characteristics of the sample used in the study

A total of 30 respondents out of the expected 30 completed the questionnaires. This represented response rate of 100%, which was considered adequate representation of the population to make conclusions. All the respondents were female. These findings are contained in the table below.

Table 1: Number of respondents and age

Age Range	Number	Percent
20-40	6	20
41-50	6	20
51-60	8	26.8
51-60	5	16.6
Do not know their age	5	16.6
TOTAL	**30**	**100**

From the survey, the respondents that have 0-2 hectares of land are 15 while those with up to 10hectares, were 15. This means that 50% of the women farmer sin kamugere sub-location farm on land size less than 2 hectares, making them small scale farmers.

Marital Status

Of the 30 respondents interviewed, 21 of the respondents, 70% of were married while 9 of the women, 30% were widowed.

Table 2: Other sources of income

Of the 30 women, it was observed that 41.7%, 12 of respondents have other sources of income generation other than farming. It was observed that most of the women resulted to being casual labourers on other people's farms, still reiterating the value agriculture adds to the lives of the rural residents, who are mostly farmers. This is as reflected in the table below;

Source of income	Frequency	Percent
Selling tea/snacks	5	41.7
Casual labor	5	41.7
From spouse	2	16.6
Total	12	100

4.3 Women Farmers who have sought Agricultural Extension Services and challenges faced

The respondents were asked whether they had ever sought AES and 80% of the respondents said that they had while 20% said that they did not know what AES are and so, have never. This is highlighted in the table below. For those who had sought AES, they were asked to indicate the source of the AES. It was noted that out of the 30 respondents in this study, 24 had on their own initiative sought AES from different sources while 6 had never sought these services, because they did not know if AES exist. Of the 24 respondents who had accessed AES, 15 had successfully managed to access these services from either a cooperative or a local based development organization. 9 others managed to access these services form Government extension officers. All the 24 respondents in addition, specified the distance they had to travel, if any, to reach the locations where these AES were being availed. It was noted that majority of the women travelled more than 2Km to reach to where a known extension office or officer was located. This is as illustrated below;

Table 3: Sources of AES

From	Frequency	Percent
Cooperative/ Non-Governmental Organization	15	62.5
Government officers	9	37.5
Total	24	100

Table 4: Distance Travelled to seek AES

Distance Travelled to seek AES (KM)	Frequency	Percent
0 - 2	9	37.5
2 - 5	15	62.5
More than 5	0	
Total	24	100

The respondents who has sought for AES were asked if they had encountered any situation that made their access of AES difficult and out of the 24 respondents who had accessed AES, 23 had encountered problems. They ranged from high costs associated with AES, Far location of AES as well as illiteracy. This is as illustrated in the tables below;

Table 5: Whether there were challenges faced while seeking the services

	Frequency	Percent
Yes	23	95.8
No	1	4.2
Total	**24**	**100**

Table 6: Challenges women face while seeking AES in Kamugere Sub Location, Embu County

Challenges	Frequency	Percent
High costs of accessing AES	6	25
Far location of AES	7	29.17
AES Officers are mostly men	6	25
AES Officers do not understand Kiembu, the local language	3	12.5
Cannot read and write	1	4.17
Lack of confidence	1	4.17
Total	24	100.0

4.4 Costs farmers are willing to pay for AES

The 30 respondents, both those had sought AES and those who had never were asked to state how much they would be willing to pay for AES needed on a monthly basis. It was noted that majority of the farmers would be willing to pay kshs. 0-100 for AES; 33.3% would be willing to pay between Ksh. 101-200 while only 10% would be willing to pay more than Kshs. 300 monthly for AES. This is reflected in the table below;

Table 7: Costs farmers are willing to pay

Expenses possible on AES (Kshs)	Frequency	Percent
Less than 100	4	13.3
0-100	10	33.3
101-200	9	30
201-300	4	13.3
Above 300	3	10
Total	30	100

Table 8: Costs charged by providers of AES in Embu County

2 expert respondents from the Ministry of Agriculture and from an organization actively involved in empowering rural farmers known as Amiran, which has a branch in Embu County, were asked on the costs they charge farmers for offering AES.

If officer has to travel (KM)	Cost of AES by MoA	Cost of AES by Amiran
0 – 10	Cater for transport costs	Cater for transport costs
10 - 20	Cater for transport costs and pay 1,000kshs	Cater for transport costs and pay 500kshs
More than 20	Cater for transport costs and pay 3,000kshs	Cater for transport costs and pay 2000kshs

NB: Above 20km, both the MoA and Amiran refer the farmers to their local officers, if available.

4.5 Farming seasons mostly in need of AES

Table 9: Whether there are farming seasons and activities that require more AES than others.

YES/NO	Frequency	Percent
No	3	10
Yes	27	90
Total	30	100

Table 10: Periods when AES are more necessary

Season	Frequency	Percent
Weeding/Planting/ wet season	14	46.6
Harvesting/ Marketing/selling/ dry season	16	53.4
Total	30	100

The respondents were asked whether there are farming seasons and activities that require more AES advise more than others. The tables below show that 90% of the respondents felt that there are farming seasons when AES are needed more; in addition, 53.4% felt that AES are more necessary during harvesting season while 46.6% felt that AES are needed more during the planting season.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the study, presents conclusions and recommendations on the Challenges women farmers face in accessing Agricultural Extension Services, in Kamugere Sub Location of Embu County. Suggestions for further research are included in the chapter.

5.2 Summary of findings

The purpose of the study was to investigate the challenges women farmers face in accessing Agricultural Extension Services in Kamugere Sub Location of Embu County. This study was confined to women farmers from Kamugere sub-location, Kagaari North, Embu County.

The objectives of the study were to examine the AES targeting women farmers in Kamugere sub location Embu County; explore the different AES available to women farmers in Embu County and to explore the challenges women farmers in Embu County face in accessing AES. Questions geared towards achieving the objectives were stated.

The literature review focused on a historical overview of AES in Kenya, the policies guiding provision of AES as well as the various providers of AES in Kenya; The literature review shows that women have always faced more challenges than men in accessing AES as well as other necessary agricultural resources; further to Kenyan women farmers being limited to fully access Agricultural Extension Services, they receive less than 10% of the other resources awarded to farmers such as credit.

The study involved 30 respondents drawn from Kamugere Sub Location in Embu County. Data was collected through face to face questionnaires and key informant interviews. The data gathered was analyzed using descriptive statistics and advanced statistics. Frequencies and percentages were computed to draw some inferences related to the variables investigated. Information that could be quantified was subjected to content analysis.

5.3 Discussion

The findings of the study were presented under the heading 'Challenges women farmers face in accessing Agricultural Extension Services, in Kamugere Sub Location of Embu County'. The following is a brief summary of the study.

The study revealed that several factors contribute to women farmers' inability to access the available AES. These factors include high costs of AES, far locations of AES and illiteracy.

The study also revealed that there are no adequate measures put in place in kamugere Sub Location, to promote reach of AES by women farmers. It was further revealed that when AES are availed, other factors impede the participation by women farmers, such as illiteracy. The study therefore established that there are different challenges that inhibit women from accessing AES, even when available.

The study revealed that the engagement of male extension officers also prevented many women farmers from freely interacting with them to seek for advice; thus, proving that culture inhibits the access of AES by women. The study further revealed that women are less likely to travel for long seeking AES and as a result, when the AES are located far from the women, they are not well accessible to women farmers.

5.4 Conclusion

There are many constraints which are being faced by farm women in attaining access to extension services. To explore challenges women face in accessing agricultural extension services, the present research was undertaken in Kamugere sub location in Embu County. A convenient sampling technique was employed to select the study respondents. Data were collected over a one week period in the month of November 2014 from 30 women small holder farmers. Both qualitative and quantitative methods of data collection were used and analysis was done by using computer Excel software.

The results showed that women farmers' access to agricultural extension services was limited. Among different challenges which hinder women's access to agricultural extension services were cultural constraints, low literacy levels among women, non-availability of female extension staff in agricultural extension departments, lack of local women organizations, violence against women, limited access to credit facilities, less control over resources, social structure, and

limited access to market information, mobility and lack of self-confidence. Based on the findings of this study it was concluded that for women to make meaningful contributions in increasing agricultural productivity it is necessary that more AES be provided to women farmers and their accessibility increased.

The study suggests that for women to embrace modern agricultural practices there is an urgent need to the challenges identified to be addressed and for further studies to be undertaken involving larger samples. The main weakness of this study is that findings cannot be generalized beyond the sample of 30 women who provided the information used in this study. From the study one can conclude that high costs of accessing AES and far location of AES are amongst the leading factors in inhibiting women farmers' access of AES. Other factors are also responsible for limiting the access of AES by women in Kamugere Sub-Location, Embu County, including culture where most male extension officers are male, limiting their contact with women farmers.

REFERENCES

ANDERSON, J. & VAN CROWDER, L. (2000). The present and future of public sector extension in Africa. Contracting out or contracting in? The Public Administration and Development, 20, 373-384

AIAEE 2003, Proceedings of the 19th Annual Conference. Raleigh, North Carolina, USA.
Barnett, H. (1953). *Innovation: The basis of culture change*. New York: McGraw Hill.

Beal, G., E. Rogers, & Bohlen, J. (1957). Validity of the concept of stages in the adoption process. *Rural Sociology* 22:166-168.

Bohlen, J. (1961). The adoption and diffusion of ideas in agriculture, in J. H. Copp, Editor, *Our changing rural society: Perspectives and trends*. Ames: Iowa State University Press.

Coleman, J. (1957). The diffusion of innovations among physicians. *Sociometry* 20:253-270.

COLLINSON, M. (Ed.) (2000). A history of farming systems research. , Wallingford, CABI Publishing and Food and Agriculture Organization of the United Nations.

DAVIS, K. & PLACE, N. (2003). Current concepts and approaches in agricultural extension in Kenya. GAUTAM, M. (1999). Agriculture Extension: The Kenya Experience. Washington D.C. The World Bank Operations Evaluation Department. Report No. 19523, June 30, 1999.

FARRINGTON, J. (1998). Organizational Roles in Farmer Participatory Research and Extension: Lessons from Last Decade.

FAO. 1994. Women, agriculture and rural development, a synthesis report of the Africa region

GAY, L.R. (1992). Educational Research: Competences for Analysis and Application. New York: Macmillan Publishing Co.

IFPRI–World Bank. 2010. Gender and governance in rural services: Insights from India, Ghana, and Ethiopia. Agriculture and Rural Development. Washington, DC, USA: The World Bank.

Kothari, C.R. (1985). Research Methodology: Methods and Techniques. New Delhi: Wasey Eastern Ltd.

Kenya Population and Housing Census; KPHC, 2009

KATZ, E. (2002). Innovative Approaches to Financing Extension for Agriculture and Natural Resource Management: Conceptual considerations and analysis of experience. LBL, Swiss Center for Agricultural Extension, Eschikon 28, CH-8315 Lindau, Switzerland

Kenya National Bureau of Statistics, 2013

Lionberger, H. (1960). *Adoption of new ideas and practices.* Ames, Iowa State University Press.

MCMILLAN, D. E., HUSSEIN, A. & SANDERS, J. H. (2001). What institutional model for agricultural extension in the semi-arid horn of Africa. IGAD/INTSORMIL Conference in Nairobi, November 2001. Nairobi, Kenya.

MOA. (2008). The Ministry at a Glance. Ministry of Agriculture, Republic of Kenya, Office of the Permanent Secretary, April 2008.
http://www.kilimo.go.ke/kilimo_docs/pdf/moa_at_glance.pdf

Mugenda, O.M. & Mugenda, A.G. (1999). Research Methods: Quantitative and Qualitative Approaches. Nairobi: ACTS Press.

PETER, C. B. (1996). A guide to Academic Writing. Eldoret, Kenya: Zaft chancery.

ROMANI, MATTIA. (2003). The impact of extension services in times of crisis: Côte d.Ivoire 1997-2000. Centre for the Study of African Economies, University of Oxford. CSAE. WPS/2003-07

Rogers, E. (1958). Categorizing the adopters of agricultural practices. *Rural Sociology* 23:345-354.

Rogers, E. (1962). *Diffusion of innovations*. New York: Free Press.

Rogers, E., & Shoemaker, F. (1971). *Communication of innovations: A cross-cultural approach*. 2nd edition. New York: Free Press.

SAITO, H. Mekonnen and D. Spurling. 1994. Raising productivity of women farmers in sub-Saharan Africa. World Bank Discussion Paper 230. Washington, DC.

World Bank. (1999) Agricultural Extension the Kenya Experience. Précis World Bank Operations.

World Bank Discussion Paper 230. Washington, DC. P. Moock. 1976. The efficiency of women as farm managers: Kenya. American Journal of Agricultural Economics: Proceedings Issue, 58(5): 831-835; 58(5): 831-835.