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BARRIERS AFFECTING ACCESS TO AGRICULTURAL EXTENSION SERVICES BY WOMEN FARMERS IN MURANG'A DISTRICT.

A project paper submitted in Partial fulfilment of masters of Arts Degree in the University of Nairobi

2003
DECLARATION

This paper is my original work and has not been submitted for a degree in any other university.

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This paper has been submitted for examination with our approval as university supervisors.

Professor Preston A. Chiterë

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DEDICATION

To my beloved son, Martin Mwangi and my parents G.K Mwangi and Jane Waithira Mwangi for their efforts to educate me.
ACKNOWLEDGEMENT

I wish to express my sincere thanks to several parties who assisted me in writing this project paper.

I am deeply indebted to my university supervisors, Prof. Preston Chitere and Dr. Mary Omosa for their guidance, contributions and advice on how to proceed with the paper.

I wish to thank my parents for paying my fees hence enabling me to pursue the M.A. course.

Special thanks to my friend, Moses Mureithi Njuguna for his encouragement and support as I undertook the studies.

I wish to acknowledge the support of Kiharu Division Agricultural Staff and my research assistant Mr. Charles Iruku.

I am grateful to all the 70 respondents for their cooperation and information and Ms Jennifer Kariuki for typing the paper.
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ABSTRACT

The study is mainly concerned with investigating the barriers affecting access to Agricultural Extension Services by women farmers.

Agricultural Extension Services were introduced in Kenya in the pre-independence era with the aim of teaching farmers improved farming practices. Since then, the GOK through the MoALD has put a lot of effort in disseminating the Agricultural messages to the farmers, both men and women.

Despite these efforts, Agricultural Extension Services have not been accessible to all farmers, especially women.

This study set out to find out how selected factors influence women’s access to Agricultural Extension Services. The study focused on all women (married or single) in Muchungucha focal area, Mbiriri location, Kiharu division, Murang’a district, Kenya.

Using the simple random sampling technique, a total of 70 women were selected as respondents.

The study employed the theoretical models of diffusion of innovations and liberal feminism.

The data for the study were collected by survey method. Primary data were obtained using a questionnaire that was administered to the respondents. A key informant guide and a focused group discussion guide were used in interviewing key informants and the focal area committed members, respectively. Both descriptive and inferential statistics were used in the data analysis.

The main results of the study were that income levels and occupations influence women’s access to Agricultural Extension Services while education level, age and marital status did not significantly influence their access to Agricultural Extension Services.

It was concluded that access to Agricultural Extension Services influenced the type of improved farm practice adopted on the farm. Practices such as soil conservation measures, fertilizer use, compost making, proper spacing, use of certified seeds, pest and disease control, construction of zero grazing units, keeping dairy goats, spraying and deworming of animals are only adopted by those respondents who had contact with Agricultural Extension Services.

The study also found that the type of agricultural extension service in contact with women farmers is influenced by the type of farm management.

Women from jointly managed farms (husbands living at home) do not have contact with such types of Agricultural Extension Services as field days, tours, seminars and demonstrations.

In light of these findings, it was recommended that there is need to sensitise both farmers and extension workers on gender issues in agriculture, so that both sexes can participate in Agricultural Extension Services.
There is need for more research on access to Agricultural Extension Services by women farmers because access in the focal area is different from outside the focal area. Hence research should be carried out on farmers outside the focal area.
CHAPTER ONE

1.0 INTRODUCTION

Agricultural Extension is a two-way communication process involving adult learning processes. Its aim is to improve knowledge, change attitudes and behaviours, lead to adoption of new technologies and improve skills for both farmers and extension workers. The role of extension services is to provide information to allow better use of available resources by organizational skills of farmers. This is with a view of increasing and improving farmer’s incomes and productivity on sustainable basis. The broad objective of extension services is to contribute to national food security (Benor and Bartex, 1984).

The introduction of extension services in rural Kenya can be traced to the pre-independence era. The colonial government introduced agricultural extension services with the aim of persuading rural people to adopt improved farming methods and improved ways of living (Standt, 1997). Since then, a number of approaches have been tested. These include integrated rural development, farming systems, farm management, participatory rural appraisal, and training and visit - contact farmer with specific seasonal messages (Everson and Bindlish, 1993).

For any extension approach to effectively meet the needs of agriculture, it is essential that it serves women farmers as well as men. While the above extension approaches differ in the mode of message dissemination, all of them are similar in that they do not incorporate gender concerns in the aspects of extension (Everson and Bindlish, 1993). This is a major drawback to improving farming activities, considering that women play a crucial role in agriculture. This is mainly in the production of food for household or market, in post harvest activities, in cash cropping (Saito and Spurring, 1992). Compared to men, women generally have a wider range of pre-planting and post-harvest tasks.

As males move into off-farm employment, women’s farming roles are expanding and evolving (Carr, 1991). Hence extension that effectively reaches women farmers initially generates more food for the household. While this is recognized by management in many
extension services, it has often proved a difficult goal to achieve. There are various reasons for this failure. A study by MoALD shows that male extension workers tend to target male farmers for their extension messages, training and even in the allocation of farm inputs (MoALD, 1996). Others studies by the World Bank show that extension messages do take into account the target audience which in most cases are women. The extension messages are presumed to be gender neutral, which is not true (World Bank, 1990). This has been observed in soil conservation recommendations where the farmer is expected to excavate terraces, which in most communities is considered a man's job (Chavangi, 1998).

The MoALD projects are planned without gender analysis and do not address special needs of the women (Bindlish and Evenson, 1993). Such needs include women's lack of mobility and time. However the MoALD has made various recommendations so as to have gender equity and mobilization in extension (MoALD, 1998). But while these recommendations have been implemented at national level, the same have not yet been implemented at unit level (GEMS Magazine, 2002).

1.1 PROBLEM STATEMENT

Although women are responsible for at least 70 per cent of staple food production in African (World Bank, 1989, they operate under greater constraints than men. This is mainly because they have less access to information, technology, land, inputs and credit.

For the last four decades, agricultural extension systems are often criticized as not serving women, particularly in developing countries, where women predominate in the farm workforce (Boserup, 1965, Lele 1975, Staudt 1978, Berger et al 1984, IRRI 1985, Ngwira 1987, Herz 1988 and Chavangi 1998). When agricultural extension was introduced, it targeted men, because its policy was to improve export crops. Women were not the targets because they tend to concentrate on food crops while men concentrate on cash crops (Schultz, 1989). The focus was on men farmers. In addition to food production, women also have primary responsibility for the home and childcare (AARDO, 1999), Hence, they have less available time and mobility. Most extension services, such as field days and demonstrations, require farmers to attend a full day in a central place. For most women
farmers, this is not possible due to the time constraints. According to Chavangi (1998), only few women farmers attend field days because they are unable to create time to attend them due to their busy schedules.

Farm visits is the most common type of agricultural service in Kenya (Benor & Bartex 1984). All farmers are equally entitled to such visits regardless of their sex. However, women farmers do not benefit from this service. This is due to the sociological environment in which women farmers and extension agents operate. Majority of agricultural extension workers are men and there is a problem in disseminating information to female farmers, many of who manage farms alone while husbands work elsewhere. Most male extension agents perceive women farmers as non-adopters (Saito and Weidemann, 1990) and female-headed households are rarely visited by the male extension agents (Jiggins, 1986). Although studies show that much has been done on gender mainstreaming in the provision of extension services, there is evidence that the direction to which agricultural extension has evolved in Kenya places women farmers at a disadvantage relative to men.

Studies show that men, as heads of families have received the greater part of extension support. Women on the other hand, have benefited less and have been rarely encouraged to play an equal part in extension activities (Staudt 1976, 1992, Bundlish and Evenson, 1993, Benor and Baxter, 1984).

It is also clear that women do make a vital contribution in household food security (Carr, 1991). Hence, extension should support this contribution. The real obstacles that women farmers face must be understood, and extension agents should seek out ways of channeling extension services towards women farmers.

This study therefore seeks to answer the following questions:

1. Are all types of agricultural extension services accessible to women farmers?
2. To what extent do socio-cultural barriers affect access of extension services to women farmers?
3. Do the gender roles of women farmers determine whether they receive all the extension messages disseminated by agricultural officers?
OBJECTIVES

The broad objective is to understand the extension services offered by MOALD extension agents in relation to women farmers.

Specific objectives

(i) To understand the barriers of access to extension services by women farmers, and to establish how they can be overcome.

(ii) To assess the effect of type of farm management on access to agricultural extension services by women farmers.

(iii) To determine whether women farmers' personal characteristics such as age, educational level, marital status and economic status has influenced their access to Agricultural Extension Services.

1.2 RATIONALE FOR THE PROPOSED STUDY:

According to Staudt (1992), 70-90 per cent of the rural households in Kenya are headed by women who are either married to husbands who are away from home in search of employment or are divorced, separated, widowed or unmarried. In these households women are not only responsible for daily subsistence but also all the managerial farm functions including tasks usually performed by men.

Given the women farmer’s involvement in a wide range of agricultural activities, full production potential is difficult to achieve unless the activities performed by women farmers receive adequate extension services. However, agricultural extension is still skewed towards men.

The government of Kenya has invested so many dollars in agricultural extension with the help of the World Bank (World Bank, 1989). For the government of Kenya to succeed in improving the effectiveness of agricultural extension services, it has to address the interests and activities of women farmers. This is because of their important role in agriculture and also because they represent a majority in the rural population.
In an effort to harmonize approaches in public extension services, the MoALD has prepared an extension policy framework for its National Agricultural Livestock Extension Program (NALEP). The policy aims at a broader and more farmer-oriented-extension-service, better equipped to meet the needs and demands of the small-scale family population (World Bank 2000). This policy has been implemented through the Focal Area Extension Approach project, with SIDA being the funding agency. Since the project's implementation in Murang'a district in 2000, no studies have been carried out to show how availability of agricultural extension services to women farmers, affect food productivity in the area, which is the main objective of the project.

There are no studies that have been carried out in Murang’a District that distinguish how the gender of extension staff or of the farmer affects the availability of agricultural extension services and consequently farm productivity.
CHAPTER TWO

LITERATURE REVIEW

2.1 Agricultural extension approaches

According to Everson and Bindlish (1993), considerable differences in approach, scope and organization mark extension work in Kenya. However it is possible to distinguish three approaches: Local leaders / group instructions approach training and visit (T & V) approach and focal Area (F.A) approach.

The term extension has been widely adopted to describe agricultural advisory work. Agricultural extension is the term used to describe the process by which rural people are persuaded to adopt improved farming methods and improved ways of living (Axinn and Shudhakar 1922). This definition does not draw a line between agricultural extension and community development. In fact, extension tends to deal with practical information that is useful to rural people in helping to solve their daily problems, especially those relating to agricultural production. Agricultural extension is concerned with human relationships in agriculture, the relationship between government and farmers and between the farmer and his/her soil, crops and livestock. Agricultural extension provides the bridge between the research stations and the farmers, carrying information from the research stations to the people and bringing back knowledge based upon local experience for further investigation.

Agricultural extension is essentially rural teaching and participation is purely voluntary but the potential class is the total rural population. This was clearly stated at the introduction of extension in Kenya, in the colonial Agricultural policy of 1945, which stated that, “Extension work consists of the supply of advice to all farmers, large scale or small scale, through all the available extension methods”. Five decades later, this policy has not changed; in fact the GOK has emphasized it. The main objective of MoALD is increased production and productivity. This will be achieved by helping all farmers both male and female to achieve their full production potential (MoALD, KARI and ICRAF, 2000).
Agricultural extension services were established in Kenya in 1947 by the colonial government (Lynn 1949). Since then, various extension approaches have been used.

2.1.1 Local leaders and farming groups approach

a) Local leaders approach

This approach was adopted by the colonial government in 1947 (Lynn 1949), the government could not afford a sufficient number of extension workers to cover the whole rural population. Hence the approach to extension work was through local leaders who were to act as pioneers with new methods influencing their neighbours to adopt the new methods. This approach was adopted from the U.S.A. The local leaders were volunteers but majority were the administrators, especially the chiefs.

Characteristics of opinion leaders tended to be biased against women farmers. Opinion leaders had to be accessible. Such accessibility meant social participation in face-to-face communication about new ideas.

Most women farmers are not accessible due to lack of time and mobility (Staudt 1978). Hence they could not qualify as opinion leaders.

Opinion leaders also have higher socio-economic status than their followers (Rogers 1983). A follower farmer typically seeks an opinion leader of higher status than their own. During the pre-independence era, the opinion leader had to have much larger farms than the rest of the farmers. Women did not own any land (Staudt, 1978). Hence could not qualify as opinion leaders.

b) Farming groups and organization approach

Due to the small numbers of extension staff the colonial government realized that it was economical of an extension workers time to work with groups. Extension workers encouraged rural people with common interests to come together under the local leadership to form groups such as the cooperative societies, women’s clubs, boys and girls clubs (Lynn, 1949).
The central axis of colonial government extension programs was crop and livestock production within a strong framework of soil and water conservation (Anthony et al 1979). However, the African farmers were merely told what to do by the extension officers without any explanation. Hence, the colonial government adopted a "command" approach. However, this approach failed and compulsory measures for agricultural improvement were openly rejected and technically sound programs fell into disuse once the pressure from government staff was removed (Anthony et al 1979). According to Staudt, (1976), with independence, the range of compulsion in agricultural policies was considerably narrowed, especially in the enforcement of soil conservation policies. Hence, the introduction of more favourable approaches.

2.1.2 Training and visit (T & V) approach

The T & V approach was introduced in Kenya in 1982. This was after realization that the earlier system was characterized by weaknesses which reduced the impact of extension (World Bank 1983).

The T & V approach emphasized on the following:

- Fixed work programmes and schedules
- Regular supervision of staff at all levels
- Regular visits by Frontline Extension Workers to contact farmers
- Regular (Preferably fortnightly) training of Front Line Extension Workers (FEWS) by subject matter specialises (SMSs) in the messages to be disseminated to farmers and strong links between extension and research (Everson & Bindlish, 1993).

The T & V approach emphasized on teaching the extension methods to contact farmers, who would in turn teach the follower farmers.

The contact farmers were viewed as early adopters of new extension massages. The contact farmers were selected by the extension workers based on the farmer’s characteristics, which included, high socio-economic status such as large pieces of land to be used for demonstrations, income for purchase of recommended inputs and high literacy level so as to understand the new technologies disseminated by the agricultural extension workers. However, according to Saito and Weidermann (1990), the contact farmer selection criteria are likely to discourage the participation of women farmers. Such criteria include land
ownership literacy and the ability to purchase inputs. Asking advice of village chiefs and elders in selecting contact farmers also creating a bias against female farmers. Therefore this approach did not serve the women farmers.

It was proved that T & V had a greater impact on farm productivity than the extension system if replaced in Kenya. However it had its shortcomings, hence the introduction of the Focal Area Approach.

2.1.3 Focal area extension approach

Focal Area Extension Approach was implemented by MoALD in the year 2000. In this approach the Frontline Extension worker (FEW) is expected to carry out enabling planning as opposed to executive planning. This is where the FEW sits down and plans with the farmer instead of drawing up the targets of agricultural production he/she intends to achieve without consulting the farmers, as was the case in the T&V Approach.

In the previous approach of T&V the MoALD could supply production resources such as machines, seeds and fuels to the contact farmers free of charge. It was observed that agricultural minimum packages containing seed, fertiliser and insecticide could produce good results for the farmers as long as the inputs after the programme had moved to another area (MoALD 2000).

According to Bindlish and Evenson (1993), it is not reasonable to encourage farmers to adopt a style of agriculture, which depends on such unreliable production resources. It is in this view that GOK with SIDA as the donor agency implemented the Focal Area Approach as an extension tool in the National Agricultural and Livestock Extension Program (NALEP).

According to the MoALD (2000), constraint to agricultural productivity is often gender based. For example, women farmers generally face more barriers than men in operating effectively in factor markets. As a result, they incur higher effective costs for information, technology, inputs and credit and their productivity is lowered. Women also have relatively lower incentives to increase productivity. They frequently produce the food crops whose prices are low. It is against this background that Focal Area (FA) Extension Approach was
with the aim of encouraging both male and female farmers to participate in all agricultural activities.

2.3 Agricultural extension methods in Kenya

In Kenya the main methods used by extension service to transmit technological information to farmers include:

- Individual visits by extension agents to farms (farm visits)
- Demonstrations
- Training courses
- Tours

2.3.1 Farm visits

An individual extension visit to farm households is the most common form of contact. It is derived from extension methods used by colonial authorities (Staudt, 1976). The farm visits are usually uninitiated. It is not the farmers who decide when the extension agent should visit their farms. However, a small number of farmers contact extension officers to visit their farms. These contact farmers are generally of high economic standing, and hold prestigious positions in the community. But an invitation of the extension agent might represent a request for a favor and thus might imply reciprocal obligations. Because of this, ordinary farmers who are mostly women are reluctant to contact extension agents to demand for services. In fact, the number of women managers who initiate visits by contacting an extension agent is extremely low, mainly due to this reason (Staudt 1976 Chavaggi 1998).

Inter-sex communication is another obstacle that prevents women farmers from benefiting from farm visits. This is because in some cultures, conversations between men and women who are not relatives might arouse suspicious, especially when husbands are absent. In her studies carried out in Western Kenya, Staudt noted that conversation between women and male extension workers who are not related by kinship could arouse suspicion (Staudt, 1976). Hence the male extension workers do not feel comfortable to disseminate extension messages to women farmers in the absence of men. Due to this reason the female-headed households have less access to farm visits. Majority of extension agents are men (Benor and Baxter, 1984)
The situation of a largely male personnel structure, make farm visits not an effective method to reach women farmers, many of whom manage farms alone while husbands are working elsewhere.

2.3.2 Demonstration

A second type of extension method available to farmers is the demonstrations. This is a group extension method, whereby demonstrations are given on shambas/plots belonging to an individual farmer. These plots usually belong to prominent farmers and there are a very small number of women farm managers whose farms are selected for demonstrations. The demonstrations are seldom held, perhaps once during a season in a central place in an extension unit (Oakley and Garforth, 1985). There are very few women able to attend the demonstrations due to mobility and time obstacles (Saito and Weidmann 1990, Chavangi 1998, Carr 1991). This can lead the extension agent to being biased when inviting farmers for field days and demonstrations. The extension agent would not invite the women farmers because they are likely not to attend. Demonstrations are usually announced during barazas. This poses a particular problem for women farmers, because they rarely attend barazas, again because of time and mobility constraints.

2.3.3 Training courses

A third type of extension method available to farmers is the trainings. Farmers are invited to attend training at a farmers training center or in hotels. Sessions vary in length, usually lasting one week. Although the government normally caters for the training, farmers are required to meet the transport costs (Chavangi, 1998). These trainings do not serve women farmers adequately (Benor and Baxter, 1984). The reason can be that of lack of time and mobility.

2.4 Agricultural extension messages available to farmers in Kenya

According to Umali and Schwartz (1994), Agricultural extension information transmitted to and from farmers via the extension workers include:-
i) Cultural and production techniques such as timing of land preparation, planting and harvesting, optimal input use, animal husbandry and livestock healthy crop protection, and farm building and design.

ii) Farm management, that is, record keeping, farm budgeting, financial and organizational management and legal issues.

iii) Marketing and processing information such as prices, market options, storage procedures, packaging techniques, transport and international standards for quality and phytosanitary requirements.

iv) Community development such as the organization of farmers' associations.

The information can aim at improving either food crops or the cash crops. The information should be disseminated to both male and female farmers.

2.5 Barriers to availability of extension services to women farmers

Considering the important role that women play in agricultural production (Staudt 1992), there is need to develop agricultural support services that can effectively make women farmers more productive (Poats and Feldstein, 1989). It is evident that women's contributions to agricultural production is of importance in achieving household food security (Carr, 1991, FAO, 1980, Cowan, 1978). Hence it would be expected that women would be the recipients of extension messages. However, studies indicate that male heads of household and farmers with access to resources are the primary clients of agricultural services in Africa (Berger et al 1984). Hence majority of the women farmers are not involved in agricultural extension services. Studies have shown a range of obstacles which women face and which impede their greater involvement in agricultural extension services (Garforth & Oakley, 1985).

Most of these obstacles arise from cultural and social factors. Other constraints include illiteracy, poor amenities in rural areas, inadequate training programmes, limited access to and control over resources such as credit and extension services and thereby to input supplies and marketing outlets. According to AARDO (1999), these obstacles can be summarized as follows:-
Cultural
Cultural obstacles are bound up in local customs and religious practice. In some societies, women are prohibited from conversing directly with non-family men. In others, custom forbids them to meet in public places, while in many, women are discouraged from participating in non-domestic activities.

Domestic
Domestic burdens are a severe handicap to women getting more involved in extension. Women have a full time job contributing to the domestic economy and caring for and managing the family household.

Status
Women are generally accorded a lower status than men and are not expected to play an active role in extension activities. Poor rural women find it almost impossible to break out from their ascribed status in order to have some voice in development.

2.5.1 Gender of extension agent
It has been argued for nearly three decades that some agricultural extension agents should be women (Boserup 1970, Schultz, 1989, Saito and Spurling 1992). However studies show that the agricultural extension services in Kenya is male dominated. (Bindlish and Everson, 1993, Saito and Weidemann, 1990). It is sociologically difficult for the male-dominated extension service to deal professionally with women farmers. Due to the majority of extension agents being men, the extension messages are usually directed to farm operations performed by men.

A 1986 survey of extension agents conducted by the World Bank in Kenya showed that female extension workers represent only 8.6 percent of the total number of all extension workers (World Bank, 1989 a). In addition to their relatively smaller numerical presence in extension, female extension workers are mainly trained on home economics (Carr, 1991), while the male extension agents are trained in general agriculture. Home Economics is perceived as having primarily a domestic science focus. Hence the female extension workers
provide the rural women farmers with training in food handling and preparation, nutrition, childcare and hygiene and not in agricultural production.

According to Carr (1991), this is because many of the female staff have received specialized home economics training and do not feel confident about their ability to impart production-oriented training on crop and animal husbandry to women farmers. In fact, in rural Kenya provision of agricultural extension to women has been concentrated in the Home Economics section of the extension branch of the MoALD (Maingi 1996).

In some societies, it is difficult for male extension agents to effectively interact with women farmers. This is due to cultural norms, which circumscribe male-female interaction (Saito and Weidman, 1990). In such cases even technical advice in activities performed by women may have to be channeled through male family member (Benor and Baxter, 1990). The extension agent assumes that the information given to male family members will be passed along to the female farmers in the household.

This is often not the case. Studies show that agricultural knowledge acquired by males often does not trickle across effectively to females in the family (Fortmann 1978, Spring 1985).

In most African communities, men are seen as authority figures whose decisions are to be followed. Male extension agents, raised in such cultural traditions, often expect women farmers to follow their directions and do not therefore encourage questions (Krogh, 1988; Evans, 1989).

2.5.2 Perceptions of extension agents towards women farmers:

Agricultural extension services are very important to every farmer whether male or female. However, rural women are not perceived as farmers by extension agents and other government officials (Carr, 1991). When an extension agent visits a farm, he or she expects to deal with the man as the head of a household, rather than with a woman (Bindlish and Evenson, 1993). This is despite the fact that women perform most of the agricultural work and they are the primary people involved in agricultural production.
Most of the extension agents train men on agricultural production because they find it a waste of time to train the women heads of households who in most cases would not afford the recommended inputs.

The extension approach, which has been employed by MoA for the last two decades, requires the recruitments of contact farmers to be visited by the extension agent regularly. The tendency of extension agents to cater chiefly to men is often apparent in the selection of contact farmers. The contact farmers should be selected if they meet certain characteristics. Studies show that even where women farmers meet these characteristics they are not selected (Benor and Baxtor, 1990). This is mainly so even in the absence of sociological barriers to male extension staff working with women farmers, and even in cases where the extension agent is a woman (Benor and Baxtor, 1990). This is because the extension agents especially men consider women as farmers' wives rather than as serious farmers in their own right. The extension agents have the perception that women have physiological limitations for farming. This suggests that the extension agent do not see the need to reach women farmers. One may then conclude that they are really biased against the women farmers.

The bias against women farmers is manifested further in the programmes targeted towards them whereby, there is a distinct division of extension programmes directed toward men, from those directed towards women. The extension messages on the utilization and management of farm resources are directed towards men. Conversely, non-agricultural extension programmes are frequently directed toward women and seek to improve the resources within the home and family (Garforth and Oakley, 1985). However, this division is not appropriate because many women are farmers in their own right. This is either because there is no man living in the family or because some women have their own crops for which they are responsible. Even where the head of the household is a man, women do most of the farm work (Saito and Weidemann, 1990).

2.5.3. Lack of credit and input
Along with extension services, farmers also need credit or cash to pay for the new extension techniques such as certified seeds, fertilizers and pesticides. Studies show that women are at
a serious disadvantage in getting credit (Staudt, 1978, 1992, McCormick 1984). Land ownership is the usual collateral for farm credit, but women seldom own land. Women, who neither own nor control land, cannot secure a loan from the formal lenders with which to improve their farm productivity. In most cases the male head of household refuses to release the land’s title deed, which the formal lenders find as satisfactory collateral for fear of having their shamba auctioned in case of default in loan repayment, which they argue will surely occur if such matters are left to women.

Lack of access to inputs such as certified seeds, fertilizers and pesticides make it difficult for women to succeed as food producers. These inputs are usually supplied by the cooperative societies and are only issued with authority from the person under whom the shares are registered, who in most cases are the men, whose names are registered in the lands title deeds (Schultz, 1989). Studies carried out in Murang’a District show that for over 50% of the women farmers, lack of money kept them from using more improved varieties of seeds, fertilizers and other inputs (World Bank, 1989). Some extension recommendations call for hired labour. However, most women farmers do not have ready cash or access to credit, for payment of the wage labour.

Farmers who cannot afford inputs and who cannot pay for hired labour are less likely to be interested in extension activities. On the other hand, extension agents are less likely to target this group because of their inability to respond to recommendations to purchase inputs and additional labour. Women farmers are less likely to afford the recommended inputs. This in turn lowers their chances of having contact with extension agents. Studies by Koows (1989) show that the women farmers using fertilizers in Kenya are far much fewer than the men farmers who use fertilizers.

2.5.4. Lack of education

Majority of the rural women in Kenya are illiterate (Gill, 1987), while many of their male counter parts are literate. This is mainly due to gender based educational discrepancies in the country. In fact, in Kenya 30% of the women are unable to read and write (FAO 1987). Studies have shown the levels of productivity of female farm managers and how it increases with education (Moock 1976, 1981).
Women's access to agricultural extension and their ability to comprehend and use technical information is determined by their level of education (Saito and Weidemann, 1990). More studies have demonstrated the link between farmers' efficiency and farmers' education (Jamison and Law 1982). While some of the extension messages may be clear and easy to comprehend, others are technical and require some basic education to understand (Saito and Spurling, 1992). This indicates that majority of the women, since they are illiterate, would not comprehend the extension messages, hence the extension agents would be reluctant to deal with them.

In Kenya, farmers learn about new farming techniques and products mainly through verbal means, such as through visits by extension workers, in meetings and from observation and trials on farms and demonstration (Kinara, 1984). However, these services are also backed up by printed materials. Hence one needs to be literate to understand the IEC materials. Because of their low level of education, women are less able than men to respond to written extension materials. Although leaflets in simple language advising communities on health issues are available, leaflets in very simple language designed for farmers, who have had little education, are not available. Those available require good reading skills from the farmers, which most women do not have.

The training and visit extension system requires that a contact farmer be able to read and write. This requirement does not favour women, since majority are illiterate.

2.5.5. Lack of time

Studies of time use in rural Kenya indicate women are likely to have fewer, leisure hours than men. The women spend one – third of working hours on food preparation and childcare, which stretches their working day to 13 – 14 hours. (World Bank 1989). This leaves the women with very little time, to participate in regular extension programs.

Women's participation in agricultural activities is hampered by their daily tasks, which pose excess demands on their time (OECF, 1991). Some of these tasks such as family meal preparation are not flexible and hence cannot be rescheduled. Some of the extension services
such as demonstrations and field days are held in a central place where the farmers are expected to converge. Women farms do not benefit from this service because they are less mobile than men. Women farmers have less time and cash for transportation. According to Chavangi (1998) only few women attend field days, the main reason being that they are unable to create time to attend.

2.5.6 Women participation in agricultural decision-making

Women may be defector heads of households but still not able to make agricultural production decisions such as to buy or sell livestock or to plant cash crops. According to Staudt (1991), in most households, male decisions are often final, what is good for a man is automatically assumed to be good for the family. This discourages the extension agent from training the women. The women cannot implement any technology before consulting the men (Carr, 1991). Chavangi (1998) notes that women farmers are able to make decisions on routine activities. Sale of farm produce and small livestock such as goats and chickens. When it comes to major decisions such as sale of cattle then a male member of the family has to be consulted first to get advice on pricing and secondly to be informed on the decision to sell. She further notes that where there is no close male relative, then the area headman or assistant chief will be consulted. Decision related to land subdivision or ownership are made by the men and or sons in the home.

Mwangi (1999) argues that the absence of men has increased the female domain in decision-making. Various studies show women are involved in making day-to-day decisions concerning cash crops subsistence and livestock production (Silberschmidt, 1991; Abbot 1974 and Colson 1970).
2.6 Theoretical framework

A theoretical framework is essential to understanding factors that may influence or associate with the identified problem (Khasakhala, 1984).

2.6.1 Diffusion and innovation theory

Diffusion is the process by which an innovation is communicated through certain channels over time among members of a social system (Rogers, 1983). One of the events involved in diffusion is when a change agent seeks to persuade a client to adopt an innovation.

This theory will be used in this study because the aim of agricultural extension is to aid in diffusing among the community, useful and practical agricultural information, and to encourage the application of the same.

In agricultural extension, the change agent is the agricultural extension worker while the client is the farmer and the innovation is the agricultural message. The client may approach the change agent with a problem or need, and the innovation is recommended as a possible solution.

Agricultural extension is the oldest diffusion system in Kenya, having been introduced in the pre-independence era.

The diffusion and innovation theory has guided choice of farmers to be educated and assisted in other ways by the extension service. The theory indicates that in social unit innovations are first received by some person and that from these person innovations diffuse or are communicated to other persons in the social unit (Rogers E and Shoemaker F, 1971).

Adoption of an innovation by farmers is a process rather than a simple unit act (Jones, 1967). According to Rogers (1962), farmers are categorized according to the time period they had taken to adopt a given innovation into innovators, early adopters, early and late majority and laggards. Many factors are related to the adoption of new technology after it has been introduced to the public. The extent to which various practices are adopted is related to the sources of information (Bohlen, 1967). The sources include agricultural extension workers,
There are other variables related to adoption of new technology. These include socio-economic status, personality variables and communication behaviour (Rogers 1983). Earlier adopters have more years of education than later adopters. Earlier adopters also have larger sized farms and higher access to credit (ibid). Sharma D. and Leogans (1967) in their studies of adoption of farm practices in India noted that farmers who had been to school for more years better understood various agricultural messages than did illiterate farmers. They also found farmers whose economic status was high to be better exposed to various sources of farm information that those with low economic status.

Thus the process of adoption of innovations indicated by the diffusion and innovation theory is influenced mainly by socio-economic status, that is the age, size of farm and level of education. However, from the literature review, it is indicated that women farmers have very low socio-economic status, hence they do not have the characteristic of early adopters. Hence if the extension workers are guided by the diffusion and innovation theory in their choice of farmers to be taught agricultural messages, women farmers are likely to be left out.

2.6.2 Feminist Theory

Feminist theory is defined as that part of the new scholarship on women that seeks to provide a system of ideas about human life that features women as object and subject (Ritzer, 1983). Contemporary feminist theory is based on five questions. Where are the women in any situation being investigated? If they are not present why? If they are present, what exactly is their role? How do they experience the situation? What do they contribute to it? And what does it mean to them.

The feminist questions have been kept alive in the body of feminist theory formulated between 1960 and the present (Ritzer, 1983). This body of ideas can be classified according to the first two basic questions of feminist scholarship. The answers to the first question
provide the major categories of varieties of feminist theory. The main descriptions of women's social situation are that:

1. It is different from men's
2. It is unequal to men's
3. It is that of an oppressed group and the male constructed patriarchal social system

The feminist theories are used in this study because they have narrowed down their subjects of analysis to women in specific social situations. In this study the social situation is access of agricultural extension services.

Various theoretical perspectives have been developed in feminist theory, but only liberal feminist theory will guide this study.

2.6.2.1 Liberal feminism

From a liberal feminist perspective, the main gender problem is that prejudice, values and norms found in traditional laws and practices deny women equal access to the opportunities, resources and rewards that society offers.

According to liberal feminists like Friedan 1963, Bird 1979 and Janeway 1981, the key forces of inequality is sexism which consist partly of prejudices and discriminatory practices against women. Because of sexism, females are from childhood on, limited and mained so that they can move into their adult roles as dependant, subconsciously depressed beings created by the constraints and requirements of their gender - specified roles (Ritzer, 1983).

The focus of liberal feminists is on individual autonomy, the opportunity for everyone to exercise free will and share in decision-making. Thus, society should not create barriers to individual liberties. This perspective rejects the conservative view of biological determinism that persons assume their status in life because of ascribed characteristics but attribute the different status of people to social learning or socialization and the denial of opportunity (Andersen, 1997).
Thus, liberal feminists reject the belief that women are bound to particular roles and status because of their biological capacity to bear children (Andersen, 1997). The liberal solution to gender inequality is to remove the barriers to women's freedom of choice and equal participation through persuading people to change by challenging sexist stereotypes and demanding equal access and treatment (Johnson 1997).

The gender mainstreaming policy of MoALD follows the liberal feminist thinking. Its aim is to give women the opportunity to participate in agricultural production in all levels and roles, hence the utilization of this theory in the study.

2.7 Conclusion

The agricultural extension systems that have been employed in Kenya, have not served women farmers appropriately. The focus of the approaches has been men farmers.

The strategies employed by extension staff in involving farmers in agricultural programmes favour farmers of a high socio-economic status. This strategy is biased against women farmers.

The status gap between agricultural staff and majority of farmers especially women farmers prevent a smooth two-way flow of information between them in the agricultural programmes.

If the agricultural extension service is to achieve its goal of improved food productivity, then women must be involved as equal partners with men in the extension process.

Theoretically, all farm clientele, regardless of gender are entitled to services from agricultural extension workers. However, in reality, gender differences have impacts on access of extension services.
2.8 Hypothesis

**Hypothesis 1:** The access of Agricultural Extension services to women farmers is influenced by their socio-demographic characteristics.

**Hypothesis 2**

The access of Agricultural extension services to women farmers is influenced by the type of farm management.

**Hypothesis 3.**

The access of Agricultural Extension Services to women farmers has a significant impact on improved farm practices adopted by farmers.

**Dependent variable:**

Dependent variable: is the one that the researcher is interested in explaining and predicting (Singleton 1988). In this study the dependent variable is access to agricultural services.

Indicators of this variable are:

(i) Frequency of the respondents' contacts with the Agricultural Extension agents.
(ii) Methods of the respondents' contacts with the Agricultural Extension agents.
(iii) Sources of information about the aspects of crop and livestock production.
(iv) Knowledge on various aspects of crop and livestock production.
(v) Knowledge of extension worker.

**Independent variables**

1. **Personal Characteristic of the farmers**

This variable is further divided into five attributes.

   a) Age of woman
b) Education level of woman

c) Marital status

d) Level of income

e) Type of occupation

f) Husband's residence

a) Age of the woman

The respondents will be classified into five age groups.

(i) <39 years

(ii) 40 - 49 years

(iii) 50 - 59 years

(iv) 60 - 69 years

(v) >70 years

b) Educational level of woman

The indicator here is the number of years the woman has had of formal education

(i) None (0 years)

(ii) Lower Primary (1-4 years)

(iii) Upper Primary (5 - 8 years)

(iv) Secondary and above (over 9 years)

c) Marital status

This refers to the status of the woman in terms of marriage. In this study there will be 4 indicators

(i) Married

(ii) Widowed

(iii) Single

(iv) Divorced
d) Level of income

This refers to the amount of money the woman earns either from off-farm income generating activities or from sale of surplus food or domestic animals.

The following income brackets per month will be the indicators of the respondent's economic status.

(i) Under Kshs 1,000
(ii) Kshs 1,000 - 3,000
(iii) Kshs 3,000 - 5,000
(iv) Over Kshs 5,000

e) Type of occupation

This refers to the nature of off-farm or another form of employment for a wage or salary.

Indicators here are

(I) Off-farm employment
(II) No off-farm employment

2. Type of farm management

Indicators for this variable are

a) Female managed farms (where husbands live away).

b) Jointly managed farms (where husbands live at home).

3. Adoption of improved farm practices

Indicators for this variable are the improved practices adopted by the farmers. These improved practices include.

a) Fertilizers
b) Compost manure

c) Pest and disease control

d) Soil conservation measures

e) Dairy goats

f) New fodder trees

g) Zero grazing unit.
CHAPTER THREE

METHODOLOGY

3.1 Study Method

This study used the survey method. According to Singleton (1988) survey research involves the application of questionnaires or interviews to relatively large group of people. In survey research, information is collected from part of a groups in order to make generalizations about the whole group. The survey was be carried out in Mbiri location of Kiharu division and the results were be generalized to represent the larger population of Murang’a district. The study adopted both quantitative and qualitative research methods.

3.2 Study site and description

The study was carried out in Murang’a district of central province. Murang’a district borders Nyen to the north, Maragua to the south, Kirinyaga and Machakos to the east and Nyandarua to the west. Murang’a district is one of the five districts of Central Province of Kenya. Murang’a has four administrative divisions namely Kahuro, Kiharu, Kangema and Mathioya.

There is a wide range of suppliers of agricultural extension services in Murang’a district. However the public sector represented by the MoALD are the main suppliers. Others include non-governmental organizations, research centers and the private sector.

In the last few years, NGOs have become increasingly involved in agricultural extension activities in the district. Such NGOs include Kenya Institute of organic farming (K.I.O.F) Wangu Emporium and the Catholic Church. These NGOs provide services direct to the farmers on general agricultural activities, with K.I.O.F concentrating on advocacy of organic farming.

The private sector includes private agribusiness firms such as farmchem and Twiga chemicals. They provide information exclusively on the use of their respective products. Marketing firms such as homegrown and Frigoken horticultural firms provide extension
services to their suppliers to ensure volume, quality and timely supply. The MoA and private sector’s attention to women farmers is minimal, while the NGO’s concentrate their trainings to the women farmers. The private sector deals with high-income crops, which are considered as men’s crops as seen in Chapter Two. The agricultural policy adopted by MoA before the year 2000, directed at women in domestic rather than agricultural roles. Hence the extension workers did not consider the women as farmers but rather as the farmer’s wife as observed earlier in chapter two. With the introductions of the new agricultural policy under NALEP/SIDA, which aims at promoting both male and female farmers, it is expected that the women farmers will have access to extension services. Murang’a is one of the pilot districts of the NALEP/SIDA Focal Area Extension Approach Project.

3.2.1 Climate

Murang’a district experiences three climatic conditions in three different regions. The western region has an equatorial type of climate while the central region has a sub tropical climate and eastern region has a semi arid climate.

Murang’a receives two rainy seasons. The short rains in October – November and the long rains in March – May.

Temperatures in the district varies from 6° C to 30°c for the three regions. Rainfall varies from less than 500mm to 1600mm per annum for the three regions.

3.2.2 Agriculture

Agriculture is the backbone of the district’s economy. Approximately 98% of the families in the district derive their livelihood from Agriculture. Farming is mainly small scale with subsistence, cash crop and dairy activities. Small-scale farming covers 62% of the district.

3.3 Justification of the site selection

In Murang’a district, 50% of the households hardly have enough to eat throughout the year. This is mainly due to the collapse of the coffee and dairy industries. Hence farmers just have to produce enough to eat since there is no income to purchase foodstuffs. Murang’a is a pilot
district in implementation of Focal Area Approach whose main objective is to increase food productivity.

In Murang'a district women present higher population, women are the managers or co-managers of farm operations and there is increased work responsibilities with the advent of male migration to towns. Despite their role in agriculture, these women often receive considerably less access to agricultural services and Focal Area Approach aims at improving this situation. Hence it is important to study how availability of Agricultural Extension Services alongside other production resources contributes to food productivity in the area.

3.4 Unit of Analysis

According to Baker, these are social entities whose social characteristics are the focus of the study. Thus, they are a collection of things that will be studied (Baker, 1994). In this study this is the access of Agricultural Extension services.

3.5 Unit of Observation

In this study, this is the women farmer.

3.6 Sampling Design

According to Singleton 1998, this is that part of the research plan that indicates how cases are to be selected for observation.

This research adopted probability sampling combined with some non-probability techniques. According to Singleton 1988, probability sampling involves random selection and the chances of selecting any case are known. In non-probability sampling, the definition of the population to be studied is restricted and there is no way of specifying the probability of each units inclusive in the sample. There is no assurance that every unit has some chance of being included (Nachmias, 1996).
3.6.1 Sampling of the Focal Area

The researcher used probability sampling in selecting the Focal Area (FA) to be covered in the study. There are three focal areas in Kiharu division and only one was selected.

Focal Areas in Kiharu

<table>
<thead>
<tr>
<th>Location</th>
<th>Focal Area</th>
<th>No. of households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gatuni</td>
<td>Gathairu</td>
<td>400</td>
</tr>
<tr>
<td>Mbiri</td>
<td>Muchungucha</td>
<td>426</td>
</tr>
<tr>
<td>Gikindu</td>
<td>Kagikai</td>
<td>440</td>
</tr>
</tbody>
</table>

Simple random sampling was used to select only one focal area to be covered in the study.

The name of each focal area was written on a piece of paper, folded, and the pieces were thoroughly mixed in container. One piece was randomly drawn, and this is the focal area that was covered in the study.

Simple random sampling was used because it makes the sample drawn to be free of personal bias (Gupta 1987).

The study covered only Muchungucha focal area due to the limitation funds, time and personnel available for the study.

3.6.2 Sampling of Households Heads

For the household sampling, probability sampling was used. There are approximately 426 households in Muchungucha focal area. A sample of 70 households was drawn using the simple random method. The list of farmers in the focal area was obtained from the frontline extension worker, in charge of the focal area.

- Semi structured questionnaires were administered to the household heads.
3.6.3 Selection of Focal Group Discussion Members (F.G.Ds)

a) Common Interest Groups

There are a total of 10 common interest groups in a focal area. A sample of 5 common interest groups was drawn through simple random selection.

- Focus group discussions (FGDs) were held with the C.I.G members.

b) F.A. committee members

There is one committee serving the F.A with a membership of 12 persons.

- Focus group discussions (FGDs) were held with the 12 persons.

c) Selection of Key Informants

There are eight staff who offer Agricultural Extension Services to the farmers in the Focal Area all of who were interviewed as key informants using an interview guide.

3.7 Tools of data collection

3.7.1 Semi structured questionnaires

Semi structure questionnaires were the major instruments of the study. The semi-structured questionnaire (annex 1) were administered to the farmers by either the researcher or the researcher assistant. 70 household heads were interviewed.

The interview schedule was divided into two parts: Part I had question on the socio demographic background of the farmer. This included, sex, age, educational background, income and occupation.

Part II focused on the access of agricultural extension services to women farmers. This included, the type of service in contact with, the frequency of the contact, type of messages disseminated and the relevance of such messages to the women farmers.
3.7.2 Focus Group Discussions

A total of 3 Focused Group Discussion were held, two with the Common Interest Group (CIG) members and one with Focal Area Committee Members. The researcher was able to obtain information on access to Agricultural Extension Services by women farmers. The Focal Group Discussion were guided by Interview guides (Annex 2).

3.3 Key Informant Interviews

Key Informant Interviews were used to collect information from the Agricultural Extension workers. An interview guide (Annex 3) was used to guide the researcher, enabling her to understand the nature of extension work.

3.8 Sources of Data

The study utilized both primary and secondary data.

1. Secondary Sources

The researcher referred to the Murang'a District Agricultural Annual, Quarterly and Monthly reports. These reports were used to generate information on the focal area approach operations of the administrative structure of the agricultural office.

2. Primary Sources

i) Interviews with a sample of 70 households heads.

ii) Focus groups discussions were conducted with the following: -

- Common interest group members
- Focal Area Committee Members

iii) Key informant interviews were held with Agriculture Extension workers.
3.9 Data analysis

Both qualitative and quantitative data analysis was carried out.

3.9.1 Inferential Statistics

Information from household interviews was interpreted and presented using inferential statistics. According to Singleton (1998), inferential statistics are used by a researcher to make decisions on references about characteristics of a population based on observations from a sample taken from the population.

The researcher manually coded the questionnaires and entered them into the computer for analysis using the statistical package for the social sciences (SPSS). In this study the statistics were used to test hypotheses.

3.9.2 Descriptive Statistics

The data from Focus Group Discussion, was interpreted through descriptive statistics. According to Baker (1988), this refers to simple statistical methods, which do not support or falsify a relationship between variables but simply help in the description of data. In each study, the data was reduced to an understandable way and patterns in the responses of respondents was summarized. The techniques used to describe the data include use of mean, tables and percentages.
CHAPTER FOUR
DATA PRESENTATION, ANALYSIS AND SUMMARY

4.1 Socio demographic characteristics and access to agricultural extension services

4.1.1 Introduction

The farmer socio demographic characteristics are assumed to influence access to Agricultural Extension Services by women farmers. In this chapter, the researcher looked at the distribution of farmers according to personal characters, which include age, education, marital status, level of income, type of occupation, husbands residence and number of children.

The researcher further analyzed how the personal characteristics influence the access to Agricultural Extension Services, the personal characteristics are cross tabulated with access to Agricultural Extension Services.

4.1.2 Age of the respondent.

The underlying assumption is that age influences access to Agricultural Extension Services. When the respondents were distributed according to their age it was found that they are distributed in to various age groups. However they are all above 20 years and below 80 years. The mean age of the respondents is 56 years with a mode of 50 years. The youngest woman was 28 years old and the oldest 75 years.

Table 1. Distribution of the respondents according to their age.

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;39</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>40-49</td>
<td>14</td>
<td>20%</td>
</tr>
<tr>
<td>50-59</td>
<td>36</td>
<td>47.1%</td>
</tr>
<tr>
<td>60-69</td>
<td>10</td>
<td>14.2%</td>
</tr>
<tr>
<td>&gt;70</td>
<td>8</td>
<td>11.4%</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>
4.1.3 Access of agricultural extension services in relation to age of the respondents
The age of respondents was cross tabulated against access to Agricultural Extension Services

<table>
<thead>
<tr>
<th>Age</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>&lt;39</td>
<td>2</td>
<td>3.7</td>
</tr>
<tr>
<td>40-49</td>
<td>11</td>
<td>20.3</td>
</tr>
<tr>
<td>50-59</td>
<td>29</td>
<td>53.7</td>
</tr>
<tr>
<td>60-69</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>70&lt;</td>
<td>5</td>
<td>9.3</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>100</td>
</tr>
</tbody>
</table>

It is apparent from the table that age has only a slight impact on access to agricultural extension services. Majority of those who had no contact are the middle aged (between 50-59 years). All respondents aged below 39 years had access. However, it is important to note that most of the women in the sample were middle aged. It is only a few of the young (<30) and the old (70>) who are part of the sample.
4.1.4 Respondents’ level of education

Most of the women have had lower primary education (54.2%) and 22.8% have had upper primary education. However, those who have lower and upper primary education can only read and write in vernacular. 20% have had secondary education and can communicate in both vernacular and English languages. 3% are illiterate and can neither read nor write.

Table 3 Distribution of the respondents according to level of education.

<table>
<thead>
<tr>
<th>Level of education</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None (0 years)</td>
<td>2</td>
<td>30%</td>
</tr>
<tr>
<td>Lower Primary (1-4 years)</td>
<td>38</td>
<td>54.2%</td>
</tr>
<tr>
<td>Upper Primary (5-8 years)</td>
<td>16</td>
<td>22.8%</td>
</tr>
<tr>
<td>Secondary (over 9 years)</td>
<td>14</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100%</td>
</tr>
</tbody>
</table>

4.1.5 Access of agricultural extension services in relation to education level

The researcher analysed the influence of level of education on access to Agricultural Extension Services and established that all those who had not attained any formal schooling had contact with agricultural extension services. For those who had reached lower primary, 53% had contact, and for those who had reached upper primary, 25.5% had contact. Majority of those who had reached secondary school level had contact. This translates to the fact that there is no connection between level of education and access to agricultural extension services.
Table 4 Access of agricultural extension services in relation to education level

<table>
<thead>
<tr>
<th>Education level</th>
<th>Yes</th>
<th></th>
<th>No</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>None (0 Years)</td>
<td>2</td>
<td>3.9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lower primary (10-14 Years)</td>
<td>27</td>
<td>53</td>
<td>11</td>
<td>57.8</td>
</tr>
<tr>
<td>Upper primary (5-4 Years)</td>
<td>13</td>
<td>25.5</td>
<td>3</td>
<td>15.9</td>
</tr>
<tr>
<td>Secondary (over 9 years)</td>
<td>9</td>
<td>17.6</td>
<td>5</td>
<td>26.3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>51</td>
<td>100</td>
<td>19</td>
<td>100</td>
</tr>
</tbody>
</table>

In all levels of education, those who had access to agricultural extension services, outnumbered those who had no access. This shows that regardless of the level of education, most women had access to agricultural extension services.

It is evident that level of education does not influence access to Agricultural Extension Services. Information from literature review, had indicated that extension systems in Kenya requires farmers to be literate. This was observed as a requirement that does not favour women farmers. However the observations from the survey indicate that most women had access to Agricultural Extension Services regardless to their level of education. This was explained by the fact that majority of the agricultural extension workers are from the same ethnic group with the farmers hence can communicate easily even with the illiterate farmers.

4.1.6 Respondents’ marital status

When the respondents were distributed according to their marital status, it was found that almost all of the respondents were married (92.8%) and of the rest (4.3%) were widowed, and 2.9% were single women who had never being married.
Table 5 Distribution of respondents according to their marital status

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>65</td>
<td>92.8%</td>
</tr>
<tr>
<td>Widowed</td>
<td>3</td>
<td>4.3%</td>
</tr>
<tr>
<td>Single</td>
<td>2</td>
<td>2.9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

4.1.7 Access of agricultural extension services in relation to marital status

The marital status was cross-tabulated with access to agricultural extension services. The findings are tabulated below.

Table 6 Access of agricultural extension services in relation to marital status.

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Access to Extension Services</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Married</td>
<td>60</td>
<td>92.3%</td>
</tr>
<tr>
<td>Widowed</td>
<td>3</td>
<td>4.6%</td>
</tr>
<tr>
<td>Single</td>
<td>2</td>
<td>3.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>65</td>
<td>100%</td>
</tr>
</tbody>
</table>

The marital status seem not to significantly affect access to extension services. From the table, all the single and widowed women had contact with agricultural extension services, while also a large proportion of the married women had contact with agricultural extension services (92.3%).

All the single and widowed women had contact with agricultural extension services and also a large proportion of the married women had contact. Hence marital status seems not to significantly affect access to agricultural extension services. However according to the literature review, the married women were likely to receive extension services. The focal area approach overcomes the discrimination of farmers based on their marital status.

This can be explained by the fact that all the women are in the same focal area, hence qualify for a visit from the agricultural extension workers.
4.1.8 Respondents income level.

The monthly income was used to measure the respondent's financial status. It was observed that majority of the respondents depend on income from dairy and surplus food crops especially bananas. With the collapse of coffee industry there is no income from cash crops. Most respondents have very minimal income (28.6%) and in fact rely on remittances from relatives working away in towns. The income ranged between Ksh 500 and Ksh 6,000. The data is presented in the table below:

Table 7 Distribution of respondents according to their income level.

<table>
<thead>
<tr>
<th>Monthly Income</th>
<th>No. of households</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Ksh 1000</td>
<td>20</td>
<td>28.6</td>
</tr>
<tr>
<td>Ksh 1000-3000</td>
<td>40</td>
<td>57.1</td>
</tr>
<tr>
<td>Ksh 3000-5000</td>
<td>6</td>
<td>8.6</td>
</tr>
<tr>
<td>Over Ksh 5,000</td>
<td>4</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

4.1.9 Access of agricultural extension services in relation to income level

The income level was cross-tabulated with access to agricultural extension services

Table 8 Access of agricultural extension services in relation to income level

<table>
<thead>
<tr>
<th>Income level</th>
<th>Access To Extension Services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under Ksh 1000</td>
<td>13</td>
<td>28.3</td>
<td>7</td>
</tr>
<tr>
<td>Ksh 1000-3000</td>
<td>31</td>
<td>67.4</td>
<td>9</td>
</tr>
<tr>
<td>Ksh 3000-5000</td>
<td>2</td>
<td>4.3</td>
<td>4</td>
</tr>
<tr>
<td>Over Ksh 5,000</td>
<td>0</td>
<td>0.0</td>
<td>4</td>
</tr>
<tr>
<td><strong>Column Total</strong></td>
<td>46</td>
<td>100</td>
<td>24</td>
</tr>
</tbody>
</table>

Most of the respondents with minimal income (28.3) had contact with agricultural extension services. Majority of those with average income (67.4) also had contact with agricultural
extension services. However, only a small number (4.3) of those with above average income had contact with agricultural extension services. None of the farmer with over Ksh 5000 income had contact with agricultural extension services. This can be explained by the fact that those with above average income are either in business or formal employment, hence have little time to attend to the Agricultural Extension Trainings.

Hence there is a relationship between level of income and access to Agricultural Extension Services.

Majority of the low income respondents had access to agricultural extension services while those from high income level had no contact. Unexpectedly, the lack of contact increased with the level of income.

Hence the income level influences the access to agricultural extension services negatively. This was explained by the fact that those with above average income are either in business or formal employment, hence have little time to attend to Agricultural Extension Services.

### 4.1.10 Occupation of respondents

The survey established that majority of the respondents are housewife (53%) and are mainly involved in the household chores. 39% are farmers. These are mainly the married women whose husbands live away. Very few of the women are in business and formal employment, 7% and 1% respectively.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>27</td>
<td>38.6%</td>
</tr>
<tr>
<td>Housewife</td>
<td>37</td>
<td>52.9%</td>
</tr>
<tr>
<td>B/Woman</td>
<td>5</td>
<td>7.1%</td>
</tr>
<tr>
<td>Formal employment</td>
<td>1</td>
<td>1.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

### 4.1.11 access of agricultural extension services in relation to type of occupation

The respondent type of occupation was cross tabulated with access to agricultural extension services.
Table 10 Access of agricultural extension services in relation to type of occupation

<table>
<thead>
<tr>
<th>Type of occupation</th>
<th>Access To Extension Services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farmer</td>
<td>20</td>
<td>47.6</td>
<td>7</td>
</tr>
<tr>
<td>Housewife</td>
<td>21</td>
<td>50.0</td>
<td>16</td>
</tr>
<tr>
<td>Business Woman</td>
<td>1</td>
<td>2.4</td>
<td>4</td>
</tr>
<tr>
<td>Formal employment</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>100</td>
<td>28</td>
</tr>
</tbody>
</table>

Majority of the respondents who are farmers had contact with agricultural extension services (47.6%) most of the housewives also had contact with the agricultural extension services (50.0%). However only 2.4% of the respondents in business had contact with agricultural extension services and none in formal employment had contact with agricultural extension services. Hence there is a relationship between type of occupation and access to agricultural extension services. Majority of respondents who had formal employment or were in business had no contact with agricultural extension services. There is a negative relationship between access to agricultural extension services and occupation. Having an occupation that earns one a good income, of which some can be saved to purchase foodstuff had a negative effect on the values of agricultural extension services as a prerequisite to enough foodstuff. Also having an occupation left little time to attend to agricultural extension services.

4.1.12 Data summary

The respondents are distributed in age groups between 28 – 75 years. Respondents in all age groups had access to agricultural extension services. In fact, age had no impact on access to agricultural extension services. Majority of the respondents are literate with only 3% being illiterate. Respondents from all levels of education had access to agricultural extension
services. The assumption from literature review was that the respondents with higher level of education had more access to agricultural extension services. However from the data this is not the case.

From the data, marital status seems not to significantly affect access to agricultural extension services. A large proportion of the married women had contact and all the single and windowed had contact.

Type of occupation influences the access to agricultural extension services. Majority of respondents who had formal employment or were in business had no contact with agricultural extension services while most of the housewives and farmers had contact.

4.1.13 Hypothesis testing
The first hypothesis was that access to agricultural extension services by women farmers are influenced by their social demographic characteristics (hypothesis 1). However of all the social demographic characteristics studied, only income level and type of occupation, influenced access to agricultural extension services. In both cases, the influence was negative.

4.2 Nature and scope of agricultural extension services at the focal area

4.2.1 Introduction
The researcher examined the nature and scope of agricultural extension messages by carrying out a key informant interview with the agricultural extension workers in the area and administering a questionnaire to the women farmers. This was with a view of understanding the types of agricultural extension services accessible to women farmers.

4.2.2 Knowledge of extension worker.
When the farmers were asked if they know the front line extension worker, 67 out of 70 were on the affirmative. Hence a large percentage (96%) is aware of the availability of the extension services.
4.2.3 Frequency of contact with extension worker

The researcher asked the respondents about the frequency of the contact with agriculture extension worker. The response is presented in the table below.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>No of farmers</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Once a week</td>
<td>23</td>
<td>32.8%</td>
</tr>
<tr>
<td>One a fortnight</td>
<td>41</td>
<td>58.6%</td>
</tr>
<tr>
<td>Once a month</td>
<td>6</td>
<td>8.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Majority of the farmers are in contact with the extension worker fortnightly and others weekly. No farmer is in contact with the extension worker on a daily basis. This can be explained by the large staff farmer ratio in Murang'a district.

4.2.4 Methods of contact

When asked about the type of extension methods they were in contact with, the respondents stated they were in contact with various methods.

The results are presented in a bar graph below
Farm visits being the most common type of Agricultural Extension Services were reported by 65 of the respondents (92.8%). Hence it is the most encountered agricultural extension service.

Asked which of the extension methods they consider more important, the respondents cited field days and farm visits.

4.2.5 Sources of information

Asked about the source of knowledge on improved farming practices, the respondents' response was as tabulated below.
Table 12 Sources of information

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A E W</td>
<td>65</td>
<td>92.8%</td>
</tr>
<tr>
<td>Spouses</td>
<td>2</td>
<td>2.9%</td>
</tr>
<tr>
<td>Neighbours / friends</td>
<td>2</td>
<td>2.9%</td>
</tr>
<tr>
<td>Media (Radio &amp; Newspapers)</td>
<td>1</td>
<td>1.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

While a majority of the respondents cited the agricultural extension workers as sources of information (92.8%) others stated that they received information from spouses (2.9%) who had attended agriculture training and neighbours. Avery small percentage (1.4%) cited the media, mainly the radio and newspapers. This is according to literature review where the agricultural extension workers were cited as the main sources of extension messages.

4.2.6 Knowledge on various aspects of crop and livestock production

The respondents were asked about their knowledge on various aspects of crops and livestock production. Majority of respondents had knowledge on weeding (97.1%), compost making (78.5%) farmyard manure application (74.2%), and digging soil conservation terraces (68.5%). The data is presented in the table below:

Table 13 Knowledge on various aspects of crop and livestock production

<table>
<thead>
<tr>
<th>Activity</th>
<th>Knowledge %</th>
<th>No knowledge %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digging soil conservation terraces</td>
<td>68.5</td>
<td>31.5</td>
</tr>
<tr>
<td>Compost making</td>
<td>78.5</td>
<td>21.5</td>
</tr>
<tr>
<td>Pest &amp; disease control</td>
<td>67.1</td>
<td>32.9</td>
</tr>
<tr>
<td>Fertilizer application</td>
<td>61.5</td>
<td>38.6</td>
</tr>
<tr>
<td>Weeding</td>
<td>97.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Farm yard manure application</td>
<td>74.2</td>
<td>25.7</td>
</tr>
<tr>
<td>Deworming</td>
<td>51.4</td>
<td>48.6</td>
</tr>
<tr>
<td>Spraying</td>
<td>44.2</td>
<td>55.8</td>
</tr>
<tr>
<td>Zero grazing unit</td>
<td>45.7</td>
<td>54.3</td>
</tr>
<tr>
<td>Dairy goats</td>
<td>37.1</td>
<td>62.9</td>
</tr>
</tbody>
</table>

It was established that while majority of the respondents had knowledge on crop production practices, few had knowledge on animal production practices. This was explained by the fact
Table 12 Sources of information

<table>
<thead>
<tr>
<th>Source</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.E.W</td>
<td>65</td>
<td>92.8%</td>
</tr>
<tr>
<td>Spouses</td>
<td>2</td>
<td>2.9%</td>
</tr>
<tr>
<td>Neighbours / friends</td>
<td>2</td>
<td>2.9%</td>
</tr>
<tr>
<td>Media (Radio &amp; Newspapers)</td>
<td>1</td>
<td>1.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

While a majority of the respondents cited the agricultural extension workers as sources of information (92.8%) others stated that they received information from spouses (2.9%) who had attended agriculture training and neighbours. A very small percentage (1.4%) cited the media, mainly the radio and newspapers. This is according to literature review where the agricultural extension workers were cited as the main sources of extension messages.

4.2.6 Knowledge on various aspects of crop and livestock production

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Table 13 Knowledge on various aspects of crop and livestock production

<table>
<thead>
<tr>
<th>Activity</th>
<th>Knowledge</th>
<th>No knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digging soil conservation terraces</td>
<td>68.5</td>
<td>31.5</td>
</tr>
<tr>
<td>Compost making</td>
<td>78.5</td>
<td>21.5</td>
</tr>
<tr>
<td>Pest &amp; disease control</td>
<td>67.1</td>
<td>32.9</td>
</tr>
<tr>
<td>Fertilizer application</td>
<td>61.5</td>
<td>38.6</td>
</tr>
<tr>
<td>Weeding</td>
<td>97.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Farm yard manure application</td>
<td>74.2</td>
<td>25.7</td>
</tr>
<tr>
<td>Deworming</td>
<td>51.4</td>
<td>48.6</td>
</tr>
<tr>
<td>Spraying</td>
<td>44.2</td>
<td>55.8</td>
</tr>
<tr>
<td>Zero grazing unit</td>
<td>45.7</td>
<td>54.3</td>
</tr>
<tr>
<td>Dairy goats</td>
<td>37.1</td>
<td>62.9</td>
</tr>
</tbody>
</table>

It was established that while majority of the respondents had knowledge on crop production practices, few had knowledge on animal production practices. This was explained by the fact
that most of the agricultural extension workers are trained on agriculture and only few are trained on animal husbandry.

4.2.7 Scores of the indicators of the dependent variable – agricultural extension service

Equally weighted scores were assigned to the indicators of access to agricultural extension services. It was categorized as low (< 1), average (2 – 3) and high (> 4)

Table 14 Scores of the indicators of the dependent variable – agricultural extension service

<table>
<thead>
<tr>
<th>INDICATORS</th>
<th>SCORES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td>Knowledge of extension worker</td>
<td>√</td>
</tr>
<tr>
<td>Methods of the respondents’ contacts with the Agricultural Extension agents</td>
<td>√</td>
</tr>
<tr>
<td>Frequency of the respondents’ contacts with the Agricultural Extension agents</td>
<td>X</td>
</tr>
<tr>
<td>Knowledge on various aspects of crop and livestock production</td>
<td>X</td>
</tr>
<tr>
<td>Sources of information about the aspects of crop and livestock production</td>
<td>X</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>10</td>
</tr>
</tbody>
</table>

4.2.8 Initiation of farm visits

Majority of the farm visits (90%) are initiated by the farmers themselves together with the frontline extension worker, who prepare the preliminary farm specific action plan citing the specific officers to visit the farm and the interventions to be made.

Only 10% of the farm visits are initiated by the extension worker, when he/she has a new technology to be introduced.
4.2.9 Planning of demonstrations

Most of the demonstrations (95%) are planned by the agricultural extension workers when they notice lack of knowledge in certain practices, hence need to teach the knowledge through demonstrations, or when the agricultural extension workers want to introduce a new technology.

Only 5% of the demonstrations are planned by the farmers themselves after being aware of a certain technology that they would like to learn.

4.2.10 Selection of demonstrations venue

Most of the venues (80.5%) are selected by the farmers themselves

Only 19.5% of the venues are selected by Focal Area Committee Members

4.2.11 Planning the topics to be covered during the field day.

Majority of the farmers (93.4%) reported that it was done by the agricultural extension workers after carrying out interventions on specific farms and identifying various problems, which are common to most farmers, in the focal area.

6.6% of the farmers, after being aware of certain issues which they would like the agricultural extension workers to teach them.

4.2.12 Identification of need for tours

All the respondents (100%) reported that agricultural extension workers identifies the need for tours.

4.2.13 Selection of tour members

All the respondents (100%) reported that the selection is carried out by the Focal Area committee members.

4.2.14 Technology adoption decisions

The respondents were asked who makes decisions on whether or not and when to adopt the technologies recommended by the extension agent. 83.4% of the respondents said it is the husband, as the household head. This is regardless whether he is living at home or away.
26.6% of the respondents said it is either of them. This is in accordance to the information in literature review, where by according to Carr (1991) women cannot implement any technology before consulting men.

4.2.15 Decision on attendance to agricultural trainings

The respondents were asked how they decide who is to attend an agricultural training when a couple is invited. 73.5% of the respondents stated that the nature of the technical message to be thought determines who to attend. They cited if the message has elements restricted to males then the husbands attends and vice versa. Examples are while men attend livestock improvement trainings the women attend home economics trainings. 6.5% of the respondents said that whoever is free attends.

4.2.16 Effects of gender roles on access to agricultural extension services

When asked on their perspective on gender roles on access to agricultural extension services, majority of the respondents (82.6%) agreed that specific roles for men and women exist. The rest felt that there is equal sharing of tasks between both men and women. The researcher established that gender roles are distinct in the focal area. The men whether living at home or away on employment, provide capital and are the breadwinners. Women do all the housework and childcare and still join the men in the farm work.

Table 15 Perception on gender roles

<table>
<thead>
<tr>
<th>Perception</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender roles exist</td>
<td>58</td>
<td>82.6%</td>
</tr>
<tr>
<td>Gender roles do not exist</td>
<td>12</td>
<td>17.4%</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100.00</td>
</tr>
</tbody>
</table>
4.2.17 Relation of specific tasks to specific gender

Asked whether there are specific farm tasks related to the status of being a man or a woman, 72.7% answered on the affirmative, while the others (27.3%) felt that a man or woman could perform any farm task irrespective of the status.

Table 16 The data is presented in the table below

<table>
<thead>
<tr>
<th>Perception of specific farm tasks</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific farm tasks exist</td>
<td>51</td>
<td>72.7%</td>
</tr>
<tr>
<td>Specific farm tasks do not exist</td>
<td>19</td>
<td>27.3%</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100.00</td>
</tr>
</tbody>
</table>

4.2.18 Access of agricultural extension services in relation to women's role

Likert scale was used to test the extent to which respondents felt that the nature of women's roles was a factor for access to agricultural extension services.

Majority of the respondents 43 out of 70 (61.5%) did see a relationship between women's roles and access to agricultural extension services. The respondents felt that roles performed by women are tedious, time consuming and overburdening hence leaving them with little time and energy to attend to agricultural extension trainings.

Data is presented in the table below

Table 17 Access of agricultural extension services in relation to women's role

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>18</td>
<td>25.1</td>
</tr>
<tr>
<td>Agree</td>
<td>25</td>
<td>36.4</td>
</tr>
<tr>
<td>Disagree</td>
<td>23</td>
<td>33.2</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>4</td>
<td>5.3</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100.0</td>
</tr>
</tbody>
</table>
4.2.19 Data summary

Almost all of the respondents are aware of the availability of agricultural extension services. In fact, they knew most of the extension workers by name. However, the frequency of contact with extension workers was mainly once a fortnight (58.6%).

The agricultural extension services experienced by the majority of the farmers are farm visits (92.8%). Seminars and tours are the least experienced services, 5.7% and 17.1% respectively.

The respondents have knowledge on various aspects of crops and livestock production, with the sources of knowledge being the agricultural extension worker.

When the indicators of the dependent variable (A.E.S) were scored, knowledge of the extension worker, and methods of respondent contact with agricultural extension agent scored the highest, while sources of information about the aspects of crops and livestock production scored the lowest. While some of the extension methods such as demonstrations and farm visits are initiated by the respondents, field days, tours and seminars are initiated by the agricultural extension worker.

Gender roles were found to be distinct in the area. There are specific tasks that are related to the status of being a man or a woman. Most of the respondents felt that the women’s role hinders their access to agricultural extension services.
4.3 The access to agricultural extension services in relation to type of farm management.

4.3.1 Introduction
The respondents belong to homes with various types of farm management. While some households are female headed, hence female managed others are jointly managed by both husband and wife. In this section the researcher, aimed to establish the access to agricultural extension services in relation to type of farm management.

4.3.2 Distribution of respondents according to their husband’s residence.
Some farms are female managed, that is where husbands live away, while others are jointly managed, where by husbands live at home.

Asked whether they live with their husbands at home 44% of the respondents answered in the affirmative. The rest had their husbands working elsewhere. All the married women perceived their husbands as the household heads, whether residing at home or away.

Table 18 Distribution of respondents according to their husband’s residence

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husbands away</td>
<td>38</td>
<td>54.3%</td>
</tr>
<tr>
<td>Husbands at home</td>
<td>32</td>
<td>45.7%</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

4.3.3 Distribution of technologies accessible to female managed (Husbands away) and jointly managed (Husbands at home) farms.
Here a gender perspective was employed in considering the accessibility to technologies, whereby the respondents were divided into those living with husbands and those with husbands living away.
Bar graph 2 Distribution of technologies accessible to female managed (Husbands away) and jointly managed (husbands at home) farms.

Key:
- Female managed
- Jointly managed

Fertilizer use, soil conservation measures, new fodder crops and zero grazing unit technologies are adopted at higher rate where husbands are at home. These are technologies that were cited during the survey as traditionally being restricted to males.

4.3.4 Distribution of Agricultural Extension Method the respondents were in contact with

The researcher observed that different types of extension methods were accessible to the two types of farms. The data is presented in a bar graph below.
Bar graph 3 Distribution of Agricultural Extension Method the respondents were in contact with

<table>
<thead>
<tr>
<th>Method</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demon stations</td>
<td>10</td>
<td>14.3</td>
</tr>
<tr>
<td>Farm Visits</td>
<td>20</td>
<td>28.6</td>
</tr>
<tr>
<td>Field days</td>
<td>15</td>
<td>21.4</td>
</tr>
<tr>
<td>Common interest</td>
<td>8</td>
<td>11.4</td>
</tr>
<tr>
<td>Tours areas</td>
<td>3</td>
<td>4.3</td>
</tr>
<tr>
<td>Seminars</td>
<td>2</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Key:
- Female managed
- Jointly managed

From the bar graph there seems not to be a relationship between type of farm management and the method of extension service the women farmers were in contact with.

4.3.5 Nature of women’s roles as a factor for access to agricultural extension services.

Likert scale was used to test the extent to which respondents felt that the nature of women’s roles was a factor for access to agricultural extension services.

Table 19 Nature of women’s roles as a factor in access to agricultural extension services

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>18</td>
<td>25.1</td>
</tr>
<tr>
<td>Agree</td>
<td>25</td>
<td>36.4</td>
</tr>
<tr>
<td>Disagree</td>
<td>23</td>
<td>33.2</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>4</td>
<td>5.3</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Majority of the respondents (61.5%) did see a relationship between women’s roles and access to agricultural extension services. The respondents felt that roles performed by women are
Majority of the respondents (61.5%) did see a relationship between women’s roles and access to agricultural extension services. The respondents felt that roles performed by women are tedious, time consuming and overburdening leaving them with little time and energy to attend to agricultural extension trainings.

4.3.6 The access of different types of extension methods in relation to type of farm management.

In this section the type of extension methods accessible to the women farmers were cross tabulated against type of farm management.

4.3.7 Access to demonstrations in relations to type farm management

Access to demonstrations were cross tabulated with the type of farm management.

Table 20 Access to demonstrations in relations to type farm management.

<table>
<thead>
<tr>
<th>Demonstration</th>
<th>Female managed farms</th>
<th>Jointly managed farms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>26</td>
<td>68.4</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>31.6</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>100</td>
</tr>
</tbody>
</table>

There is a difference between respondents from female managed farms who attended demonstrations (68.4%) and those from joint managed farms who had attended demonstrations 31.6%).

This shows that there is a relationship between attending demonstrations and the type of farm management.

4.3.8 Access to farm visits in relation to type of farm management

Access to farm visits were cross tabulated with the type of farm management.
The number of respondents from female managed farms that had access to farm visits (86.8%) is almost the same to the number of respondents from joint managed farms who had access to farm visits (96.9%). This shows that there is no relationship between access to farm visits and type of farm management. The farm visits are accessible to all farmers in the focal area despite the type of farm management.

4.3.9 Access to field days in relations to type of farm management.
Access to field days were cross tabulated with the type of farm management

A large percentage of the respondents who had attended field days are from women managed farms (94.7%). Also while only 5.3% of respondents from women managed farms had not attended field days, 25% of respondents from joint managed farms had not attended field days.
This shows that there is a relationship between the type of farm management, and access to field days. Field days are mainly accessible to the respondents from women managed farms, in the focal area. In jointly managed farms the women are left at home as the men attend the field days. This is according to the literature review where it was stated that men attend the field days leaving the women at home.

4.3.10 Access to common interest groups in relationship to type of farm management.

Access to common interest groups were cross tabulated with the type of farm management.

<table>
<thead>
<tr>
<th>Common interest groups</th>
<th>Female managed farms</th>
<th>Jointly managed farms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>15</td>
<td>39.5</td>
</tr>
<tr>
<td>No</td>
<td>23</td>
<td>60.5</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>100</td>
</tr>
</tbody>
</table>

There is a very small difference between respondents from female managed farms who had access to common interest groups (39.5%) and those are from joint managed farms who had access to common interest groups (40.6%).

This indicates that there is no relation between access to common interest groups and type of farm management.

4.3.11 Access to tours in relation to type of farm management

Access to tours was cross tabulated with the type of farm management.

<table>
<thead>
<tr>
<th>Tours</th>
<th>Female managed farms</th>
<th>Jointly managed farms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>9</td>
<td>23.7</td>
</tr>
<tr>
<td>No</td>
<td>29</td>
<td>76.3</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>100</td>
</tr>
</tbody>
</table>
While a high percentage of respondents who had gone for tours (23.7%) are from female managed farms only a small percentage are from joint managed farms (12.5%). This shows that there is a relationship between household head and going for tours.

4.3.12 Access to seminars in relation to type of farm management.

Access to seminars was cross tabulated with type of farm management.

Table 25 Access to seminars in relation to type of farm management

<table>
<thead>
<tr>
<th>Seminars</th>
<th>Female managed farms</th>
<th>Jointly managed farms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td>2.6</td>
</tr>
<tr>
<td>No</td>
<td>37</td>
<td>97.4</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>100</td>
</tr>
</tbody>
</table>

Only 2.6% of respondents who had access to seminars were from female managed farms, 97.4% were from jointly managed farms. This shows that there is a relation between access to seminars and household head.

4.3.13 Data summary

Most of the farms (54.3%) are female managed and 45.7% are jointly managed. Some technologies were adopted in a higher rate in jointly managed farms. These include, fertilizer use, soil conservation measure, new fodder crops and zero grazing units. However, all the agricultural extension methods were accessible to both female managed and jointly managed farms.
4.3.14 Hypothesis testing

The underlying assumption was that the type of farm management influences the access to agricultural extension services by women farmers (Hypothesis 2).

From the findings, there is a negative influence of type of farm management on access to agricultural extension services by women farmers.

4.4 Impact of access to agricultural extension services by women farmers on adoption of improved farm practices.

4.4.1 Introduction.

The condition of the farm was gauged on the basis of improved farming practices that had been adopted by the farmer. The respondents were asked to name the improved food production and animal production practice they had adopted on their farms.

4.4.2 Improved farm practices

Weeding is the practice adopted by most farmers (16.7%). This can be explained by the fact that weeding is a cultural practice, which the farmers have been practicing even before the introduction of extension services. Compost making is another well-adopted technology (13.5%). Proper spacing, use of certified seeds, pest and disease control and soil conservation measures are adopted by almost the same number of farmers. However, fertilizer use is the least adopted technology (10.5%).

<table>
<thead>
<tr>
<th>Practice</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Fertilizer use</td>
<td>43</td>
<td>10.5</td>
</tr>
<tr>
<td>b) Compost making</td>
<td>55</td>
<td>13.5</td>
</tr>
<tr>
<td>c) Proper spacing</td>
<td>47</td>
<td>11.5</td>
</tr>
<tr>
<td>d) Certified seeds</td>
<td>48</td>
<td>11.8</td>
</tr>
<tr>
<td>e) Pest and disease control</td>
<td>47</td>
<td>11.5</td>
</tr>
<tr>
<td>f) Weeding</td>
<td>68</td>
<td>16.7</td>
</tr>
<tr>
<td>g) Soil conservation measures</td>
<td>48</td>
<td>11.8</td>
</tr>
<tr>
<td>h) Farmyard manure</td>
<td>52</td>
<td>12.7</td>
</tr>
<tr>
<td>Total</td>
<td>408</td>
<td>100</td>
</tr>
</tbody>
</table>
4.4.3 Animal production practices

Introduction of new fodder crops is a well-adopted practice by the farmers. Zero grazing unit and spraying is adopted by an average number of farmers while dairy goats is the least adopted practice. The data is presented in the table below:

Table 27 Adoption of animal production practices.

<table>
<thead>
<tr>
<th>Practice</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Zero grazing unit</td>
<td>32</td>
<td>18.3</td>
</tr>
<tr>
<td>b) New fodder crops</td>
<td>50</td>
<td>28.6</td>
</tr>
<tr>
<td>c) Dairy goats</td>
<td>26</td>
<td>14.9</td>
</tr>
<tr>
<td>d) Spraying</td>
<td>31</td>
<td>17.7</td>
</tr>
<tr>
<td>e) Deworming</td>
<td>36</td>
<td>20.5</td>
</tr>
<tr>
<td>Total</td>
<td>175</td>
<td>100</td>
</tr>
</tbody>
</table>

4.4.4 Farm husbandry in relation to access to agricultural extension services.

The various technologies adopted were cross tabulated against access to agricultural extension services.

4.4.4.1 Fertilizer use in relation to access of agricultural extension services

Fertilizer use was cross tabulated with contact with agricultural extension service. Majority of the respondents using fertilizers on their farms (93%) have had contact with the agricultural extension services while majority of those not using fertilizers (74.1%) had no contact with the agricultural extension services.

Table 28 Fertilizer use in relation to access of agricultural extension services

<table>
<thead>
<tr>
<th>Fertilizer use</th>
<th>Access to extension services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>40</td>
<td>85.1</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>7</td>
<td>14.9</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>47</td>
<td>100</td>
</tr>
</tbody>
</table>

This shows that there is a relationship between fertilizer use and contact with agricultural extension services.
4.4.4.2 Compost making in relation to access to agricultural extension services

Compost making was cross tabulated with agricultural extension services.

Table 29 Compost making in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>Compost making</th>
<th>Access to extension services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>41</td>
<td>87.2</td>
<td>14</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>12.8</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>100</td>
<td>23</td>
</tr>
</tbody>
</table>

Majority of the farmers who had made compost had contact with agricultural extension services (87.2%) and majority of those not making compost had no contact with agricultural extension services (39.1%) hence there is a relationship between compost making and contact with agricultural extension services.

4.4.4.3 Proper spacing in Relation to access to agricultural extension services

Proper spacing was cross tabulated with agricultural extension services.

Table 30 Proper spacing in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>Proper spacing</th>
<th>Access to extension services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>35</td>
<td>79.5</td>
<td>12</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>20.4</td>
<td>14</td>
</tr>
<tr>
<td>Column total</td>
<td>44</td>
<td>100</td>
<td>26</td>
</tr>
</tbody>
</table>

A large proportion of the farmers who had adopted proper spacing (79.5%) had contact with agricultural extension services, while a large proportion of those who had not adopted proper spacing, had no contact with agricultural extension services (53.8%). This shows that there is a relationship between adoption of proper spacing and access to extension services.
4.4.4.4 Use of certified seeds in relation to access to agricultural extension services

Use of certified seeds was cross-tabulated with agricultural extension services.

Table 31 Use of certified seeds in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>Certified seeds</th>
<th>Access to extension services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>37</td>
<td>84.1</td>
<td>11</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>15.9</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>100</td>
<td>26</td>
</tr>
</tbody>
</table>

Majority of the respondents using certified seeds had contact with agricultural extension services (84.1%) while a large proportion of those not using certified seeds had no contact with agricultural extension services (57.7%).

This shows that there is a relationship between use of certified seeds and access to agricultural extension services.

4.4.4.5 Pest and disease control in relation to access to agricultural extension services

Pest and disease control was cross-tabulated with agricultural extension services.

Table 32 Pest and disease control in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>Pest and disease Control</th>
<th>Access to extension services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
<td>34</td>
<td>68</td>
<td>13</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>32</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
<td>20</td>
</tr>
</tbody>
</table>

Majority of the respondents who had adopted pest and disease control had contact with agricultural extension services (68%). However, also a large proportion of those who had
contact, had not adopted pest and disease control (65%). This can be explained by the high
cost of pesticides, since most of the farmers are of low-income level (chapter 4).

There is some relationship between pest and disease control and access to agricultural
extension services

4.4.4.6 Weeding in relation to access to agricultural extension services

Weeding was cross tabulated with agricultural extension services

| Table 33 Weeding in relation to access to agricultural extension services |
|-------------------------|-----------------|-----------------|-----------------|-----------------|
| Weeding                 | Access to extension services |       |       |       |
|                         | Yes (%)           | No (%)         | Yes (%)         | No (%)         |
|                         | Number            | %              | Number          | %              |
| Yes                     | 35 (94.6)         | 33 (100)       |                 |                |
| No                      | 02 (5.4)          | 0 (0)          |                 |                |
| Total                   | 37 (100)          | 33 (100)       |                 |                |

There is a very slight difference between the respondents who had adopted weeding and had
contact with agricultural extension services (94.6%) and those who had adopted weeding and
had no contact with agricultural extension services (100%)

This indicates that there is no relationship between adoption of weeding and access to
agricultural extension services.

4.4.4.7 Soil Conservation measures in relation to access to agricultural extension
services

Soil conservation measures was cross tabulated with agricultural extension services
Table 34 Soil Conservation measures in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>Soil conservation measures</th>
<th>Access to extension services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>33</td>
<td>78.6</td>
<td>15</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>21.4</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>100</td>
<td>28</td>
</tr>
</tbody>
</table>

Most of the respondents who had carried out soil conservation measures had contact with agricultural extension services (78.6%) while a large number of those who had not carried out soil conservation measures had no contact with agricultural extension services (46.4%).

This shows that there is a relation between carrying out soil conservation measures and access to agricultural extension services.

4.4.4.8 Use of farmyard manure in relation to access to agricultural extension services

Use of farmyard manure was cross tabulated with agricultural extension services.

Table 35 Use of farmyard manure in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>Farmyard manure use</th>
<th>Access to extension services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>29</td>
<td>72.5</td>
<td>23</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>27.5</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100</td>
<td>30</td>
</tr>
</tbody>
</table>

The difference between the number of respondents that had adopted use of farmyard manure and had contact with agricultural extension services (72.5%) and those who had adopted use of farmyard manure and had no contact with agricultural extension services (76.7%) is very small.
This shows that there is no relationship between use of farmyard manure and access to agricultural extension services.

This can be explained by the fact that although an improved way of farming, use of farmyard manure, is not a new technology to the farmers. They have been practicing it even before introduction of extension services.

4.4.4.9 Construction of Zero Grazing unit in relation to access to agricultural extension services

Construction of Zero Grazing unit was cross-tabulated with agricultural extension services.

Table 36 Construction of Zero Grazing unit in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>Zero grazing unit</th>
<th>Access to extension services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>22</td>
<td>51.2</td>
<td>10</td>
</tr>
<tr>
<td>No</td>
<td>21</td>
<td>48.8</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>100</td>
<td>27</td>
</tr>
</tbody>
</table>

Majority of the respondents who had constructed zero grazing units had contact with agricultural extension services (51.2%) and only a small number of those who had constructed zero grazing unit had no contact with agricultural extension services (37.9%).

This shows that there is a relationship between construction of zero grazing units and access to agricultural extension services.

However, even a large proportion of the respondents who had not constructed zero grazing units had contact with agricultural extension services (48.8%). This can be explained by the cost of the zero grazing units, which most farmers cannot afford since majority are of low-income group (chapter 4).
4.4.4.10 Growing new fodder crops in relation to access to agricultural extension services

Growing new fodder crops was cross tabulated with agricultural extension services

Table 37 Growing new fodder crops in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>New fodder crops</th>
<th>Access to extension services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>36</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
</tr>
</tbody>
</table>

Majority of the respondents who had adopted new fodder crops had contact with agricultural extension services (83.7%) while majority of those who had not adopted this practice had no contact with agricultural extension services (48.1%). This indicates that there is a relationship between access of agricultural extension services and growing of new fodder crops.

4.4.4.11 Keeping of dairy goats in relation to access to agricultural extension services

Compost making was cross tabulated with agricultural extension services

Table 38 Keeping of dairy goats in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>Dairy Goats</th>
<th>Access to extension services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>21</td>
</tr>
<tr>
<td>No</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
</tr>
</tbody>
</table>
Most of the respondents who had kept dairy goats had contact with agricultural extension services (52.5%) and majority of the respondents who had not kept dairy goats had not contact with agricultural extension services (83.3%).

This indicates that there is a relationship between keeping of dairy goats and access to agricultural extension services.

4.4.4.12 Spraying of animals in relation to access to agricultural extension services

Compost making was cross tabulated with agricultural extension services

Table 39 Spraying of animals in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>Spraying</th>
<th>Access to extension services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
</tr>
<tr>
<td>Yes</td>
<td>19</td>
<td>51.4</td>
<td>12</td>
</tr>
<tr>
<td>No</td>
<td>18</td>
<td>48.6</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>100</td>
<td>33</td>
</tr>
</tbody>
</table>

Most of the respondents who were spraying animals had contact with agricultural extension services while majority of those who were not spraying their animals, had no contact with agricultural extension services.

This shows that there is a relationship between spraying of animals and access to agricultural extension services.

4.4.4.13 Deworming in relation to access to agricultural extension services

Deworming was cross tabulated with agricultural extension services
Table 40 Deworming in relation to access to agricultural extension services

<table>
<thead>
<tr>
<th>Deworming</th>
<th>Access to extension services</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Number</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>19</td>
<td>19</td>
<td>48.7</td>
</tr>
<tr>
<td>No</td>
<td>20</td>
<td>20</td>
<td>51.3</td>
</tr>
<tr>
<td>Column Total</td>
<td></td>
<td>39</td>
<td>100</td>
</tr>
</tbody>
</table>

The difference between respondents who were deworming the animals and had contact (48.7%) and those who were deworming the animals and had no contact (54.8%) is very small. This shows that there is no relationship between deworming and access to agricultural extension services.

4.4.5 Data summary

The cultural practices such as weeding and manure application are adopted by majority of the respondents, while technical practices such as fertilizer use and use of certified seeds are only adopted by the respondents who had contact with agricultural extension services.

4.4.6 Hypothesis testing

The underlying assumption was that the access to agricultural extension services influences the improved farm practices adopted by farmers. In fact only the respondents who had contact with agricultural extension services had adopted certain practices. These include soil conservation measures, fertilizer use, compost making, proper spacing, use of certified seeds, pest and disease control, construction of zero grazing units, growing new fodder crops, keeping dairy goats, spraying of animals and deworming animals. The only practices that have been adopted by respondents who had no contact with agricultural extension services are weeding and use of farmyard manure.

This shows that there is a significant impact of access of agricultural extension services on the improved farm practices adopted by farmers.
4.5 Conclusion

From the data in this chapter the following conclusions were made.

Age has only a slight impact on access to agricultural extension services. Majority of those who had no contact are the middle aged (between 50-59 years). However, it is important to note that most of the women in the sample were middle aged.

Level of education does not influence access to Agricultural Extension Services. Observations from the survey indicate that most women had access to Agricultural Extension Services regardless to their level of education.

Income level influences the access to agricultural extension services negatively. This is opposed to the information in the literature review where by according to Staudt, 1978, 1992 the farmers with high income would pay for new extension techniques hence have more access to Agricultural Extension Services.

According to the respondents the field days and farm visits were the most important extension methods. This is in accordance to the information in the literature review, where farm visits are cited as the most common type of agricultural extension service (Benor & Baxter, 1984)

According to the key informants the extension methods are initiated by the extension workers. They decide when to hold farm visits, demonstrations, field days, seminars and tours. The farmers are rarely involved in planning for the services. This was explained by the fact that agricultural extension services are not demand driven within the focal area. However, from the literature review, in the focal area approach the agricultural extension workers are expected to have enabling planning. They are supposed to plan the extension services together with the farmers, but this is not the case in the study area.

Information from the key informants indicated that women perform all the house chores and still join men in the farms. Hence the women are left with very little time for agricultural activities. In the literature review, lack of time was cited as the main barrier to access to agricultural extension services by women farmers.
Majority of the respondents felt that there is gender role specification between men and women. 83.4% felt that the husband makes decisions on the practices to be adopted on the farm. This is regardless of the fact whether he is living at home or away. However, the type of agricultural extension in contact with women farmers seems to be influenced by the fact whether the farms were female managed (husbands living away) or jointly managed (husbands at home).

The assumption was that different types of extension methods are accessible only to jointly managed homes.

Women from jointly managed farms do not have contact with most types of agricultural extension services, such as field days, tours, seminars, and demonstrations. This is due to the fact that since the men live at home in jointly managed farms, they attend these agricultural extension services leaving the women at home.

Out of the 70 respondents, 93% had contact with the agricultural extension services. Different respondents had contact with different types of agricultural extension services. The farm visits are the most encountered type of agricultural extension services, it had been experienced by most of the respondents. Majority of the respondents cited the agricultural extension workers as source of improved farming practices.

All the respondents were aware of the improved farming practices that they ought to implement on their farms for better yields. However, only those who had contact with agricultural extension services had details on how to carry out these practices.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This was a study of access to agricultural extension services by women farmers. The researcher aimed at finding factors that influence the access to agricultural extension services by women farmers. The factors studied were divided into two categories.

i) Social demographic characteristics

ii) Type of farm management.

The selected socio demographic characteristics included; the age, level of education, occupation, level of income and marital status.

The impact of the access to agricultural extension services by women farmers on the improved farm practices adopted on their farms was also studied.

Data about the above variables was collected from a sample of 70 respondents (women) using a questionnaire.

In data analysis, descriptive statistics involving percentages and frequency distribution were used (chapter 4). Cross tabulations were used with a view to determining whether relationships existed between each of the selected variables and the respondent's access to agricultural extension services. The results are herein discussed and conclusions drawn on whose basis the study hypotheses were tested and recommendation made.

5.2 Summary of the findings and conclusions

Majority of the respondents were in middle age (50-59 yrs) and had acquired lower primary level of education. Almost all of the women were married. Majority of the married respondents reported that their husbands stay away from home in wage employment.
However all the married women perceived their husbands as the household heads, whether living at home or away.

Majority of the 70 respondents were either housewives or farmers. Only a few respondents (6 out of 70) were in other occupations like business and paid employment. Most of the respondents had 1-7 children. The mean number of children was 5. However most of the children had left the homestead and majority of the family consists of parents and less than three children staying with them. Most of the respondents have very minimal income (1000-3000/= per month. This is mainly due to the collapse of the coffee industry, hence there is no income from cash crops.

Respondents from all the age groups had contact with agricultural extension services, with the majority being from the middle age. However it is important to note that most of the women in the sample are from the middle age (50-59 years). Hence age has only a slight impact on access to agricultural extension services.

In all levels of education, those who had access to agricultural extension services, outnumbered those who had no access. This shows that regardless of the level of education, most women had access to agricultural extension services.

All the single and widowed women had contact with agricultural extension services and also a large proportion of the married women also had contact. Hence marital status seems not to significantly affect access to agricultural extension services.

Majority of the low income respondents had access to agricultural extension services while those from high income level had no contact. Unexpectedly, the lack of contact increased with the level of income.

Hence the income level influences the access to agricultural extension services negatively. This was explained by the fact that those with above average income are either in business or formal employment, hence have little time to attend to Agricultural Extension Services.
Majority of respondents who had formal employment or were in business had no contact with agricultural extension services. There is a negative relationship between access to agricultural extension services and occupation. Having an occupation that earns one a good income, of which some can be saved to purchase foodstuff had a negative effect on the values of agricultural extension services as a prerequisite to enough foodstuff. Also having an occupation left little time to attend to agricultural extension services.

Majority of the respondents felt that there is gender role specification between men and women. 83.4% felt that the husband makes decisions on the practices to be adopted on the farm. This is regardless of the fact whether he is living at home or away. However the type of agricultural extension in contact with women farmers seems to be influenced by the fact whether the farms were female managed (husbands living away) or jointly managed (husbands at home).

Women from jointly managed farms, do not have contact with most types of agricultural extension services, such as field days, tours, seminars and demonstrations. This is due to the fact that since the men live at home in jointly managed farms, they attend these agricultural extension services leaving the women at home. Hence, there is a negative influence of type of farm management on access of agricultural extension services to women farmers.

Out of the 70 respondents, 93% had contact with the agricultural extension services. Different respondents had contact with different types of agricultural extension services. The farm visits is the most encountered type of agricultural extension services, it had been experienced by most of the respondents. Majority of the respondents cited the agricultural extension workers as source of improved farming practices.

All the respondents were aware of the improved farming practices that they ought to implement on their farms for better yields. However only those who had contact with agricultural extension services had details on how to carry out these practices.

In fact only the respondents who had contact with agricultural extension services had adopted certain practices. These include soil conservation measures, fertilizer use, compost making,
proper spacing, use of certified seeds, pest and disease control, construction of zero grazing units, growing new fodder crops, keeping dairy goats, spraying of animals and deworming animals. The only practices that have been adopted by respondents who had no contact with agricultural extension services are weeding and use of farmyard manure. This shows that there is a significant impact of access to agricultural extension services on the improved farm practices adopted by farmers.

5.3 Recommendations

On the basis of the above findings, the following recommendations were made.

5.3.1 Recommendations for policy

There is need for strengthening the MoALD approach of the focal area, so as to reach as many farmers as possible. The focal area approach seems to address the gender issues in agriculture; this is why most of the socio demographic characteristic of women do not influence the access to agricultural extension services in the focal area. Hence if the focal area approach can be extended to cover the whole district, then, access to agricultural extension services by women farmers is bound to improve regardless of the socio demographic characteristics of the women.

The farmers should be sensitised on gender issues so that both sexes can participate in agricultural extension services. This can be done in collaboration with the local churches.

The agricultural extension services should be valued as a factor of production by both the farmers and the agricultural staff. This will make the farmers to see agricultural extension services as an important factor and not take it for granted.

The MoALD should adopt participatory approaches not only in the focal area but in all the areas where it offers extension services.
There is need for a policy that allows for partnership between the government and the private sector in the provision of agricultural extension services. Currently, the government through MoALD is the main provider of agricultural extension services.

Cost sharing in the provision of the agricultural extension services between the government, the private sector, and the farmers is necessary. The farmers should pay for the services. However, the implementation of this should be done carefully, so that the farmers who are mainly from low-income groups, who are the majority, do not shelve from using/paying for the services.

5.3.2 recommendations for further research

It is recommended that more studies should be done on the access of agricultural extension services covering other factors not included in this study. The study should be done on the farmers outside the focal area.

There is need for another study on the same topic but with men as the unit of analysis.
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INTRODUCTION

How are you today?

My name is Lucy Mwangi. I am a student at University of Nairobi. I have come to this Focal Area to learn about Agricultural Extension services and the women farmers. The information I’ll collect could be used by the government to improve the access of Agricultural Extension Services to women farmers in the focal area approach. I would like to ask you some questions for the next 45 minutes. The information you will give me during the interview will be treated in strict confidence.

General information

1. Respondent’s gender
   1. Male
   2. Female

2. How old are you?

3. What is your marital status?
   1. Married
   2. Divorced
   3. Single
   4. Widowed

4. Have you ever been to school?
   1. Yes
   2. No

5. If yes what educational level did you attain?
   i) None (0 years)
   ii) Lower Primary (1-4 years)
   iii) Upper Primary (5-8 years)
   iv) Secondary (over 9 years)

6. What is your occupation (e.g. housewife teacher)
7. Are you currently engaged in gainful employment?
   1. Yes
   2. No

8. If yes specify ____________________________________________

9. If you are currently engaged in gainful employment, what is your level of monthly income?

10. How much do you earn in a month from:-
    Cash crops Kshs.
    Food crops Kshs.
    Others Kshs.

11. What is your husband's occupation?
    Is he in?
    a) Self employment
    b) Temporary employment
    c) Permanent employment
    d) Others - specify

12. a) Do you have any children?
    1. Yes
    2. No
    b) If yes, how many ___________________ boys ___________________ girls
    c) How old are they?

<table>
<thead>
<tr>
<th>Birth Order</th>
<th>Male</th>
<th>Female</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Do you live with your husband at home?
   1. Yes
   2. No
   3. Sometimes
14. How big is your land? ______________________Acres

15. Do you have any livestock on your farm?
   1. Yes
   2. No

   If yes,
   a) How many cows do you have? _________________________________
   b) How many goats do you have? _________________________________
   c) How many sheep do you have? _________________________________
   d) How many chickens do you have? _________________________________

16. How many acres have you planted the following
   a) Cash crops
   b) Food crops
   c) Others

17. What was your yield in 90kg bags during the last season?
   a) Maize
   b) Beans
   c) Potatoes
   d) Others

18. Do you get enough foodstuffs to feed your family?
   Yes.
   No.

   a) If no, where do you obtain the extra foodstuffs?
   b) What are the types of foodstuff (crops and livestock products) available?
   c) What comes from your farm
      - What is brought in?
   d) What are the components of the common meal in your house? (Balance diet)

II VIEWS ON AGRICULTURAL EXTENSION SERVICES

19) What are your main problems and constraints in farming?
20) Do you know the extension agent in your area?
   1. Yes
   2. No
21) How often does he/she visit you?
   1. Daily
   2. Once a week
   3. Fortnightly
   4. Once a month

22) What qualities of the extension agent do you consider important?

23) Is the extension message he/she passes to you useful?
   1. Yes
   2. No.

   Explain

24) Are the messages relevant to your range of activities?
   1. Yes
   2. No

   If yes which ones
   If no which ones

25) Are the technical messages applicable to all farmers or only to those with certain types of resources?

26) Can you meet any additional labour requirements?
   1. Yes
   2. No

27) If no, what do you do with the technical messages that require extra labour?

28) Can you raise the necessary funds to purchase recommended inputs?
   1. Yes
   2. No

29) Are there any economic benefits, which result from being taught agricultural extension services?

30) Have you ever invited the extension agent to visit your farm?
   1. Yes
   2. No

31) Which of the following agricultural extension methods have you had contact with?
1) Farm visits
2) Field days
3) Demonstrations
4) Seminars
5) C.I.G
6) Tours
7) Others

32) Which is the most common type of agricultural extension

33) What is the content of extension messages by female and male extension workers?

34) Where else do you obtain the information on crop and livestock production other than from the extension agent?

III) Farm Condition

35) Which of the following improved farming activities have you adopted on your farm?
   1. Fertilizer use
   2. Compost making
   3. Proper spacing
   4. Certified seeds
   5. Pest and disease control
   6. Weeding
   7. Soil conservation measures
   8. Use of farm yard manure
   9. Others

36) Which of the following animal production technologies have you adopted on your farm
   1. Zero grazing unit
   2. New fodder crops
   3. Dairy goats
   4. Spraying
   5. Deworming
   6. Others
IV) Gender Roles and Extension Service

37) Are there specific roles for men and women in this focal area?
   1. Yes
   2. No

38) If yes, specify for each
   Men _________________________________________________________________
   Women ______________________________________________________________

39) According to you should there be special activities for men and others for women?
   1. Yes
   2. No
   Explain your answer ______________________________________________________

40) Who should be more involved in farming activities?
   1. Men
   2. Women
   Explain your answer ______________________________________________________

41) Some people say that the roles for women are the main barrier to access to agricultural extension services. In your own opinion, do you:
   1) Strongly agree
   2) Agree
   3) Disagree
   4) Strongly disagree

42) Are the technologies taught suitable to the women’s physical characteristics?
   1. Yes
   2. No
   Explain ______________________________________________________________

43) Do the technical messages contain elements that are traditionally restricted to either sex?
   1. Yes
   2. No
   If yes, explain which ones __________________________________________________
44) Who makes decisions on whether or not and when to adopt the technologies recommended by the extension agent?

1. Wife
2. Husband
3. Both

45) When a couple is invited for training, how do you decide who is to attend?

46) Does the gender of the household head determine the type of extension method one gets into contact with.

1. Yes
2. No

If yes explain________________________________________
APPENDIX 2
KEY INFORMANT INTERVIEW GUIDE (For Agricultural Extension Workers)

1. How often do the following officers visit the farmers?
   - Division extension coordinator
   - Crops officer
   - Home economics officer
   - Farm management officer
   - Soil conservation officer
   - Livestock production officer
   - F.E.WS

2. Who initiates these farms visits?

3. Who initiates the type of message that you disseminate to the farmer?
4. What are the % male and female agricultural officers in this extension unit?
5. Are there any factors that hinder male officers from disseminating information to female farmers and vice versa?
6. Are any specific messages passed only by male officers and vice versa?
7. Is there any criteria used to invite farmers for demonstrations, barazas and field days?
8. How do you select farmers to be visited?
9. Are there some messages that you do not feel confident to disseminate to the farmers?
10. Does your college training determine the type of message to disseminate to the farmers?
11. What are the main constraints in carrying out your extension work?

APPENDIX 3A
F.G.D. GUIDE FOR C.I.G MEMBERS
1. Who initiated the formation of the group?
2. Are there any economic benefits, which result form being a member of a C.I.G?
3. How did you select the members of the C.I.G?
4. What are the consideration / Qualification of being a group member? E.G. farm size?
5. Do you invite the extension worker to visit your group?
6. Who decides on the content of extension messages disseminated to the group?
7. Are there any messages that are taught to women members only and vice versa?
8. Do women farmers become aware on time that a C.I.G. is forming?
9. Do you think that membership in a C.I.G. enhances the quantity or quality of food production?
10. Do both male and female members adopt any recommendation discussed at the group meetings?

APPENDIX 3B
FOCUS GROUP DISCUSSION GUIDE FOR FOCAL AREA COMMITTEE MEMBERS
1. Personal characteristic of the farmers
   - Age
   - Education level
   - Marital status
   - Level of income