University of Applied Sciences
VAN HALL LARENSTEIN
PART OF WAGENINGEN UR

How to make agricultural extension services more effective in responding to the needs of female-headed households farmers.

Case of Svosve communal area in Marondera District, Zimbabwe

A Research project Submitted to Van Hall Larenstein University of Applied Sciences in Partial Fulfilment of the Requirements for the Degree of Master of Management of Development,

Specialization Rural Development and Gender (RDG)

By

Evelyn Matsika

September 2012
The Netherlands

Acknowledgements

My special thanks go to the RDG course coordinator Ms. Annemarie Westerndorp for carrier guidance and support throughout my time of study.

Supervision given by Mr Bernard Gildemacher is greatly acknowledged. The comments you gave directed and enlightened me to work on this report.

Van Hall Larenstein University, thank you for admitting me to partake studies in Master of Management of development specialising in Rural Development and Gender. I am deeply thankful to the Netherlands Government for financial support of my studies in Van Hall Larenstein University and during the field work.

All Lecturers and other staff members of Van Hall Larenstein University of applied Sciences I salute you for a job well done.

I would like to acknowledge AGRITEX staff and l am sincerely indebted to the farmers for allocating time to give information in support of this research. My deepest feeling goes to my two sons, Darevy Tadiwanashe and Denzel Tawongaishe Matsika l love you always; you were my pillars of my strength.

To all my friends, thank you for moral support during the period of my stay in the Netherlands. Contributions and encouragements l received pulled me through to the end.

Dedication

This research project report is dedicated to my beloved late parents, Mr Samson and Mrs Elizabeth Gonye you are greatly missed. May your souls rest in peace.

Contents

List of tables

List of figures

Abbreviations

AEW	Agricultural Extension Worker
AGRITEX	Agricultural Technical and Extension Services
DAEO	District Agricultural Extension Officer
FFS	Farmer Field School
FHH	Female - Headed Households
MFT	Master Farmer Training
NR	Natural Region
T and V	Train and Visit

Abstract

This study has the purpose to find out how AGRITEX, s extension methods and content can meet the needs of female headed households' farmers. Extension services provided by AGRITEX to FHH farmers do not meet their needs. So, it is important to adjust all farmer programmes to be tailored to meet the FHH farmers' needs. Low involvement of female headed households' farmers in extension activities hampers extension service delivery system whose aim is to advice farmers on good farming techniques that can be adapted by farmers so that they obtain higher yields and make them food secure thereby improve their livelihoods. Svosve communal area was rated to have low participation of female headed households in agricultural extension services. The purpose of the study was to explore how AGRITEX can make agricultural extension methods and content additional effective at some stage in responding to the requirements of female - headed households' farmers.

The research conducted combines both desk and case study. Its focus was on qualitative information. Inorder to collect in-depth data interviews were done with the help of a checklist with a list of topics. 20 female - headed households' farmers were divided into two categories, 10 de-jure 10 de-facto female- headed households' farmers. The de-jure FHH farmers were the households that are headed by female farmers who were single, widowed or divorced, while the de-facto were the households headed by those women farmers who were associated with an adult male who supports the family through remittances. The two groups were chosen to see whether they use diverse strategies when growing crops mainly focusing on inputs that are used during maize production.

Focus group discussions, individual interviews, observations and AGRITEX reports were used to collect the primary data. The use of one on one household interview was found to be useful to collect data for quantity of maize harvested and types of assets those households' possess. Direct observations and further probing made respondents giving the required information whose interviews yielded information on the constraints that make them not attending to extension activities.

The sustainable livelihood framework was adapted for data analysis to show the different livelihood strategies used by female - headed household farmers. Extension service is often talking about getting high yields but the livelihood approach is a little bit different. Farmers do practice farming in such a way to get high yields but have some other priorities. The tool of livelihood strategy is paying attention to other livelihood strategies not only getting high yields. The results of the study showed that most extension methods are not suitable for the FHH farmers except for the FFS which is rather directive and not very participatory.

The research concluded that focus of AGRITEX is very much on improving yield and is not taking other livelihoods into consideration. Its focus is mainly on external inputs while a lot of farmers cannot afford external inputs and do not have access to it. Most of extension methods ask for high level of literacy while the majority of the FHH farmers are illiterate.

The recommendations included revising the extension methods used so that they suit the needs of the FHH farmers. Farmer trainings, like the MFT programme to cater for all farmers with different education backgrounds.

Key words: *Agricultural extension, Female-headed households. AGRITEX*

CHAPTER 1. INTRODUCTION

1.1: Background

Zimbabwe has a total population estimated at 13 million of which 55% are women, about 65% of the population lives in the rural communities and majority are women and depends on agriculture for their livelihoods (Mukungu, 2005). In Zimbabwe, women are marginalized due to gender inequality which leads to a reduced number of FHH farmers who attend agricultural extension activities. Most of the agriculture trainings are usually offered to men farmers and this leads to low participation by female farmers (FAO, 1994). Land belongs to men but women have access to it in the defacto FHH farmers. In the case of the dejure FHH farmers, the land belongs to the heirs (Horrell and Krishnan, 2006). Then, this makes it difficult for female farmers to follow up on extension technologies like field demonstrations as they have to seek permission to use the land from the land owners.

Women are increasingly taking charge of farms. According to FAO (1995), 80% of women live in the communal areas whereby they constitute 61% of the farmers and provide 70% of the labour. The increase role of women in agriculture is due to migration of men which resulted in an increase of female-headed households in the communal areas (Horrel and Krishnan, 2006). The migration of men made Mudukuti (2002, p47. Cited in Zwart, 1990) said that "*a total of 40% of the households in communal areas of Zimbabwe are female headed, as men leave their homes in search of jobs in urban areas"*

Though FHH farmers have taken a lead in agriculture especially maize production and other crops but their access to trainings and extension services is limited by a number of factors that include time, distance, level of education, gender roles, socio-cultural factors. Maize is mainly grown because it used as a staple food by the majority population (Chiwenga, 2011). Mudukuti (2002) in her research paper found that women have been excluded from extension programmes because certain level of education was used as a requirement for access to training programmes. However, she further highlighted that access to agricultural extension by women farmers and the ability to use technical information was hampered by low levels of education.

Female farmers have increased their role in agricultural activities yet AGRITEX is not taking their cognisance into consideration. AGRITEX is responsible for providing agricultural extension services to farmers and its main aim is to provide regulatory, advisory and technical services in appropriate and sustainable farming methods

1.2 Problem statement

AGRITEX is providing agricultural extension services to both men and women. Despite all the efforts to provide extension services to female-headed households' farmers, they are not forthcoming for extension services leading to low participation in extension services that results in low yields. Therefore, AGRITEX would like to know the reasons why female headed households' farmers are not forthcoming to get extension services.

1.3 Research objective

To make the agricultural extension methods and content more effective in responding to the needs of female headed households' farmers.

1.4 Main Research question

What are the possibilities to make agricultural extension service delivery methods and content more effective in responding to the needs of the female headed households' farmers?

1.5 Sub-research questions

1. What are the livelihood strategies of female headed households' farmers?

2. What are the problems do FHH farmers want assistance for in participating in extension activities?

3. What is the agricultural policy's objective?

4. What is the practice of agricultural extension?

5. What kind of agricultural extension message and methods does AGRITEX offer to female headed households' farmers based on the agricultural extension policy?

6. Where is the mismatch of extension services offered by AGRITEX and the needs of female headed households' farmers?

CHAPTER 2. LITERATURE REVIEW

2.1 Definition of the concepts

Extension needs are operationally defined as the gap between what female farmers already knew and what they wanted to know more about agricultural advice (technical support and other services given by the staff of bureau of agriculture and other organization who are engaged on providing extension service) in respect of farm practices (FAO, 1995b).

Participation is when female household heads take part or are involved in all extension services or activities that are provided by AGRITEX that is attending to training programmes, contact with extension staff (AGRITEX, 2009).

Effectiveness refers to the degree to which agricultural extension programmes meet the needs of FHH farmers. Extension service is a key instrument to achieve the goals of agricultural development policies and programmes.

According to Lastarria-Cornhiel (2008, p.2) "***Feminization of agriculture*** *refers to women's increasing participation in the labour force, whether as independent producers, as remunerated family worker or as agricultural wage workers"* which increased more of on- farm work done by women. For the writer, this has "*broadened and deepens their involvement in agricultural production as they are increasingly shoulder the responsibility for household survival and respond to economic opportunities in agriculture*"

In this research feminization of agriculture is referred to the on farm work done by the female headed-households farmers based on their livelihood systems.

Beaman and Dillon (2009) defined **household** as people who live, eat and work together at least on one agricultural plot.

Female headed household is a household that is associated with an adult male who supports the family through remittances and a household headed by women who are single, widowed or divorced).

De-facto female household heads (those women who are associated with an adult male who supports the family through remittances and social networks).

De-jure female household heads (households headed by women who are single, widowed or divorced).

Livelihood strategies are the combination of activities that people choose to undertake in order to achieve their livelihood goals (Alinovi, D'Errico, Mane and Romano, 2010),

A farming system is a system in which the farmer or the farming family operates and that system cannot be separated from their economic, social and cultural well-being of the households (FAO, n.d.).

Indicators to measure effectiveness in extension service

- number of trainings attended by female headed- households farmers
- consultations made by female headed- households farmers

- number of visits by extension staff
- adoption rate of technologies
- number of trained female–headed farmers

Note: The following words are used interchangeably meaning one and the same thing: extension approach and extension method.

2.2 Farming systems in Zimbabwe

Zimbabwe's agricultural sector is a well-diversified entity that grows 23 types of food and cash-crops and has a vibrant livestock industry. The agricultural land is divided into five agro-ecological zones known as Natural Regions (NRs) which relate to climatic conditions, soils and to the appropriate farming systems adopted (see table 1)(Barrett, n.d). The quality of the land in terms of agricultural productivity diminishes from NR I to NR V. The eastern part of the country (NR I) receives an annual rainfall greater than 1,000 mm where temperatures are low. The region is appropriate for livestock and crop production and occupies only 1.6% of the total agricultural land. The Natural Region II is the northern part of the country and receives a rainfall from 750 to 1,000 mm per year, has fertile soils and a total land of 18.8% for agriculture. The agricultural activities comprise of livestock and crop production. NR III is the middle of the country where the rainfall is between 650 to 800 mm and temperatures are high. It covers about 17.6% of the total agricultural land. The agricultural activities are semi-extensive livestock production, small scale ranching and the growing of drought resistant crops. NR IV is the largest region in Zimbabwe and occupies 33% of the agricultural land area. It receives an annual rainfall between 450 to 650 mm. It suffers from severe dry spells and frequent seasonal droughts. The farming systems is mainly semi-extensive livestock production and growing of drought resistant crops. NR V is located in the low-lying areas in both the north and south of the country, occupying 29% of the agricultural land. It experiences a highly erratic rainfall pattern with an average precipitation of less than 450 mm per year. The commercial farmers of this region practise extensive beef production and ranching while the smallholder farmers are mostly into livestock and crop production with maize and small grains as the major crops (SADC, 2008).

Table 1: Land Classification by Natural Region

Natural Region	Area (km-2)	Rainfall (mm yr-1)	Farming system
I	7 000	>1 000	Specialized and diversified farming
II	58 600	750 – 1 000	Intensive farming
III	72 900	650 - 800	Semi-intensive farming
IV	147 800	450 - 650	Semi-extensive farming
V	104 400	<450	Extensive farming

Source: USDA (2004 cited in Vincent and Thomas, 1960)

2.2.1 Farming system in Svosve communal area

According to Chimhowu and Woodhouse (2006) Svosve communal area has a total land area of 110km^2 and is at an elevation ranging between 1400m and 1660m above sea level. It falls within the agricultural NR II. The amount of rainfall received ranges between 750mm and 1,000mm. In 2008, they went to say that "a key element of livelihoods in Svosve Communal area since independence has been agricultural output, centring on the production of maize, groundnut, millet, sorghum, increasingly, tobacco and paprika" (Chimhowu and Woodhouse, 2008, p.10)

2.3 Agricultural extension

Davis (2008) indicated that in the past, extension in Africa was focusing on augmenting production, improving yields, training farmers and transferring technology. Today, the adjective agricultural has been added to extension and many definitions exist. While Ayanwuyi and Zaka, (2001) stated that agricultural extension literally means the transfer of some agricultural related knowledge from one point (source) to the other (receiver) with the aim of increasing agricultural productivity and income, Davis (2008, p.16 cited in Birner, Davis, Pender, Nkonya, Anandajayasekeram, Ekboir, et al., 2006) in his research defined agricultural extension *"as the entire set of organizations that support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills, and technologies to improve their livelihoods and well-being"*.

In this research, agricultural extension is defined as transferring information and technologies about agriculture from the researchers to the farmers through the agricultural extension agents in order to improve crop yields.

According to FAO (2002), agricultural extension was introduced in Zimbabwe 1927 by Emory D. Alvord, who started with nine agricultural extension workers. Later, two departments namely Conservation and Extension (CONEX) and Agricultural Development (Devag) were established. The aim of CONEX was to provide advisory services to white large-scale commercial farmers, while Devag serviced the native smallholder farming communities. At independence in 1980, the Department of Agricultural, Technical and Extension Services (AGRITEX) was formed as a merger of CONEX and Devag. AGRITEX is an agency which provides training and advisory services for agricultural development in order to improve food security.

2.4 Information and extension

According to FAO (2010a), extension services encompass the wide range of services from communication to education activities provided by experts in the areas of agriculture, agribusiness and designed to improve productivity and overall well-being of rural populations. Furthermore it highlighted that agricultural extension can lead to significant yield increases, yet women are again found to be lagging behind in exploiting the benefits of extension services. Among other reasons, gender-specific time constraints, low level of education, limited access to resources hinder their participation. However, frequently there is a gender bias on the part of the institutions providing extension for example when there are no trained female extensionists to reach out to female farmers, in social contexts where meetings between women and men outside the nucleus family are restricted.

FAO (2010b, cited in Davis et al. 2009) indicated that a number of participatory extension methods were developed and tested in the past decade to do away with a top-down model of extension service provision to be more farmer-driven services. The extension methods can target women effectively and enhance their uptake of innovations. Participatory extension methods that encourage communication between farmers and researchers can also lead to a positive feedback loops that allow researchers to adjust innovations to local needs.

Agriculture extension system provides a broad range of services (advisory, technology transfer, training and information) on a wide variety of actions (agriculture, marketing and social organization) needed by rural people so that they can better manage their agricultural systems and livelihoods (FAO, 2010c). Extension approach can take a variety of forms both its content and its methods vary quite widely. Methods ranges from Training & Visit, field days, Master Farmer Training, group development approach, radio listening group approach, look and learn approaches.

2.5 Agricultural extension approaches used in Zimbabwe

Extension methods are approaches that are used by AGRITEX to convey agricultural information to farmers. The extension methods currently used are as follows, farmers field schools, group demonstrations and individual farmer follow-up, group meetings, field days, train and visit, and master farmer training.

- **Master Farmer training programme**

According to FAO (n.d. cited in Chipika, 1985 and Pazvakavambwa, 1994), Master Farmer training programme originated in the 1930s as a way to develop competent farmers. This is the oldest extension approach that was started some decades ago and is still on-going. The objective of master farmer training programme was to spread modern, scientific farming techniques in communal areas. A group of 25-30 both men and women farmers undergo a two-year training. Farmers have to attend 24 training sessions and farmers have to practice what

they learnt in their individual plot and this form the basis for qualifying for a Master Farmer certificate. The trainings are conducted at designated training centres twice per month. There is a written exam at the end of the two years to get an ordinary master farmer certificate and another extra one year of training to get an advanced Master Farmer certificate. The approach uses modules as training materials. The theoretical trainings are usually followed by demonstrations where possible. MFT programme is offered to both men and women farmers from communal areas free of charge. Farmers who can read and write are only eligible to get the service so it is not accessible to illiterate men and women farmers.

- **Training and visit approach**

Training and Visit (T&V) approach is an extension approach focusing on sharing technological knowledge of farmers while making extension agents' activities more accessible to men and women farmers with the idea of increasing agricultural extension services effectiveness. In this approach, the proven agricultural practices, usually from research centres are translated into packages of innovations that are passed down to the farmers through extension agents. The T&V extension schedule works on a fortnightly cycle (FAO. n.d. cited in Benor and Harrison, 1977),

FAO (n.d. cited in Hanyani-Mlambo, 1995) found out that Tand V approach was an excellent extension method in the irrigation schemes. However, the method is not appropriate in communal farming systems where time to carry out agricultural activities is not stipulated. The T&V system is found to be inappropriate where resources are limited. A top-down orientation, inappropriate and irrelevant technologies added to lack of resources limit farmer participation.

- **Group development approach**

The group approach is used when a large number of group development areas (GDAs) is established and are then trained by extension workers. It is the approach that has been developed from the T and V. GDA helps as extension workers can easily reach farmers in one place. The group approach has the assumption that all farmers have the same problems and they work on homogenous farm situations. Programmes like the government and NGOs assistance input scheme, when they come usually these groups are targeted and tend to benefit more than those farmers who are not in the group. The GDA approach is based on area and project development through community participation in which, in some cases, the local people provided labour while government or donors provided the necessary inputs (FAO, n, d).

- **Field days**

FAO (n,d) highlighted that this approach is currently used in Zimbabwe as a platform to train farmers on good farming techniques that has to be learnt from the host farmer. A farmer who has performed better than others is selected to host a field day where other farmers are invited to attend and learn from him or her. The host farmer is given a chance to explain what agricultural activities he or she carried out in his or her field, the farmer explain how he or she did to producing good crops so that other farmers can learn by asking questions which can be answered with the help of extension workers and researchers who works with these farmers. Farmers usually prefer to learn from each other than learning from extension workers who just provide information to them which is not farmer- oriented. Prizes are awarded to the winning farmers thus it is way of encouraging other farmers to adopt good farming techniques so that they can increase their yields.

- **Look and learn**

This is called an exchange group visits where farmers visits other farmers or research centres to see what they are doing. Farmers have a choice to go and practice what they see in their fields or not. The host farmers or researchers are given chance to explain to the visited farmers what they are practising. Touring farmers have a chance to see all they might needy and if it is a certain technology that is implemented them can also adopt it. The approach gives farmers an opportunity to observe and collect first-hand information from the host farmer (Mlambo, 2000). Farmers are given time to ask questions to the host farmer and to get more clarification from the extension worker. In most cases such visits are not frequently done because they are costly and require considerably planning. Both men women farmers are invited to attend.

- **Farmer Field School**

The Farmer Field Schools (FFS) is a farmer training method first developed by the FAO-assisted Indonesian. The concept behind an FFS is that groups of farmers meet on a regular basis in a field to do practical structured learning exercises that allow them to combine local knowledge with scientific ecological approaches. All courses are hands-on, practical and field-based, with few or no lectures and using the field itself as a teacher. The FFS activities are a response to and an evolutionary step within the Training and Visit framework. Instead of using the T&V demonstration plot/field, which was managed by extension staff, the FFS site (a field in the community) is managed directly by the farmer groups as a study field where structured learning exercises and experiments are carried out by the farmers themselves (Gallagher, n..d. cited in Settle et al, 1996)

2.6 Agricultural extension needs of female-headed households farmers

The information mentioned in this paragraph is based on the study done by (Horrell and Krishnan, 2006) in collaboration with AGRITEX. The assessment was done to see whether gender barriers inhibit women farmers from benefiting from agricultural development programs. The study found that women had limited access to many factors of production, lacked resources and found it harder to access credit, training and extension services. Access to land was an important factor in these other shortages, particularly credit, but women also lacked draught power and suffered marketing difficulties. The report identified the problems women faced in accessing extension services. Men were wary of allowing women to attend training sessions unless they were provided in group settings, other time commitments often barred women farmers from attending, the technologies being advanced required physical strength and some new technology increased the need for tasks traditionally done by women, such as weeding. Additionally de- facto female heads of household might be keen to conduct on-farm demonstrations but may have to get permission from their husbands that, where granted, sometimes caused delays in meeting planting dates. The report has been submitted to the policy makers and since then there is an in and out going drafting of the new agricultural policy.

2.6.1 Problems that hinder female –headed farmers access to extension services

- **Time and workload**

Considering all the farmer trainings provided by AGRITEX personnel, the scheduling of trainings often does not take into account of the chores that FHH farmers are expected to carry out such as cooking, cleaning and childcare. Without understanding female farmers' domestic duties, it may not be possible to have women farmers' attending to extension programmes. "*Rural women have less available time and mobility due to their dual domestic and agricultural roles… Time spent in farming activities depends on the following: size of the household, size of the farm, cropping pattern, agricultural potential of the region, age and health status of the women and income level of the family*" (Durutan, n. d. p.83).

- **Distance and transport costs**

Research conducted by AGRITEX (2009) found that the factor that hindered female farmers' access to extension programmes was lack money for transport. This is because the trainings centres are far away from where men and women farmers stay, so farmers have to travel long distances. Transport costs are usually beyond reach of many very high and mostly female farmers from rural areas cannot afford.

- **Level of education**

Durutan (n. d.) that there is a critical link between farmer efficiency and farmers' educational level. Low levels of literacy may constrain female farmers' access to extension support as they cannot access loans. Literacy is also connected with confidence and FHH farmers with low literacy levels may lack the confidence to participate in training or to seek help from trainers during extension delivery sessions. Lower educational level and limited contact with the outside world makes women inhibited in communicating with extension agents. The impact of education on efficiency is likely to be particularly strong when modern, as opposed to traditional agricultural techniques, are being introduced (Durutan, n. d. cited in Saito and Weidemann, 1990).

- **Irrelevant information**

Research by Connolly and Hagmann (2000) found that the message and recommendations given to the female farmers could be implemented using resources that the farmers have already and the inputs available locally. Contents and information given by extension workers should relate closely to the knowledge attitudes of the female farmers. The information should bring new technologies that reduce the burdening of production and usually the content of extension does not change to meet the current changing agricultural environment. Technology recommendations given do not always fully consider the major constraints facing communal farmers including rainfall and seasonal labour shortage. Communal farmers need information on technologies that will assist them to improve the processing, storage of food crops and marketing information usually women farmers though they might have access to resources, they do not have control over resources.

- **Socio- cultural factors**

Despite the significant roles female–headed farmers play in agriculture and food security in many developing countries, they continue to have a poorer command over a range of productive resources women's productivity in agriculture is highly dependent on their opportunity to have access to resources namely land, credit, fertilizer and other agricultural technologies. However, many rural women farmers lack access to land or to have insecure land tenure due to customary laws, culture and tradition (Durutan, n. d. cited in Saito and Weidemann, 1990).

In most countries land title is in the name of the male head of the household. Many constitutions legally support gender equality and women are becoming more aware of their rights, but social customs change slowly. The situation in many countries is that women do not have land tenure or title; they commonly have rights to its use. Often the land women are allocated consists of smaller, fragmented plots; and extension agents may be reluctant to work with such scattered plots. Women's relatively less favourable access to land and less secure tenure can be a strong disincentive to adopting new techniques or investing in the land (Durutan, n. d).

Durutan (n. d. cited in Saito and Spurling, 1992) found that cultural norms affect interactions between male agents and women farmers and between male and female farmers. Although these norms may or may not be into law, still limit male-female interaction, this was found that the use of male agents to communicate with women farmers have been tested widely and as long as the extension agents provide relevant useful information, they are accepted by all farmers whether men or women. Farmers always value relevant recommendations.

2.7 AGRITEX Policy

AGRITEX's objective is to implement the agricultural policy of government, the agriculture policy aims in achieving self-sufficiency, food security, growth with equity, fair distribution of land ownership, reduction in poverty, increase employment, promotion of regional and agricultural development. AGRITEX provides agricultural technical and extension services, which stimulates the adoption of proven agricultural practices leading to increased, sustained and profitable production (FAO, 1994). The AGRITEX mission statement is to facilitate increased agricultural production, to improve people's livelihoods (food security, income generation and poverty alleviation) and sustainable socio-economic development (Mawire, 2009).

AGRITEX's main functions are to provide regulatory, advisory and technical services, train farmers in appropriate and sustainable farming methods. Primarily, AGRITEX has to identify problems of the agricultural industry related to their area of mandate for the purposes of finding solutions to the problems. It also develops and disseminates appropriate agricultural technologies; provide farmers and the public with agricultural knowledge and information. AGRITEX generates information on agricultural production, analyse, process and disseminate agricultural information to farmers, policy makers and other stakeholders. It has promotes technologies related to food technology, including post-harvest processing, product development and dissemination of other supportive functions of the AGRITEX. In post-harvest technologies, AGRITEX develops and disseminates technology and information related to processing, storage and preservation of farm products. In addition, product development and value adding, quality control and marketing and setting up of post-harvest systems in farming communities are other services it is supposed to offer (Mawire, 2009).

In addition, it has to carry out soil surveys to recommend appropriate land use and packaging technical messages and disseminates them to farmers. Soil and foliar analysis is done to provide fertilizer recommendations and determination of quality of agricultural produce. AGRITEX also establishes and maintains strategic alliances, linkages, partnerships and networks with stakeholders and, with regional and international agricultural research and development agencies. AGRITEX involved in farmer mobilization and motivation for production through technology, seed and other input fairs, shows, exhibitions, meetings and field days as well as input facilitation (FAO, 1994, cited in AGRITEX, 1982).

2.8 Sustainable Livelihood Framework

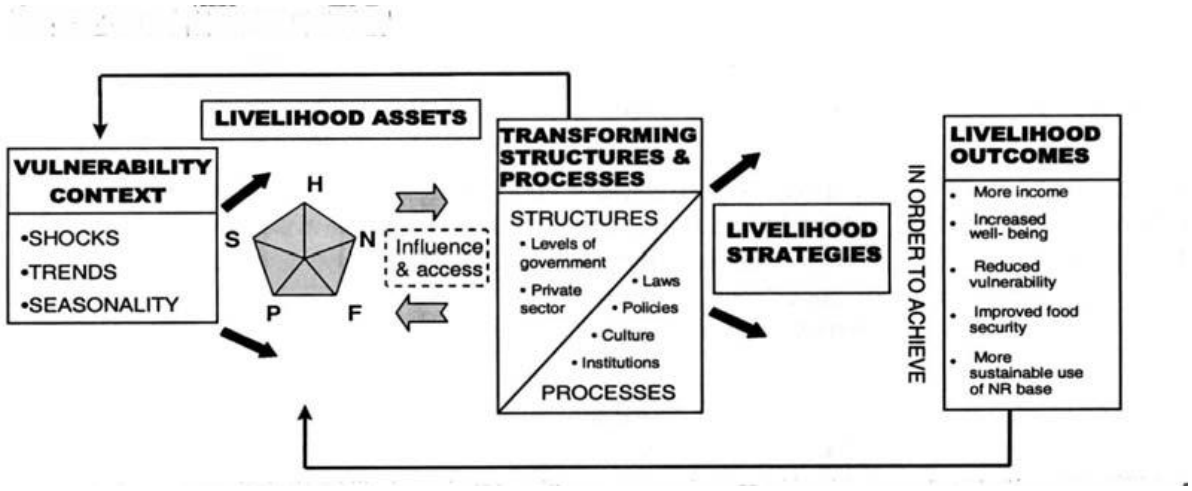


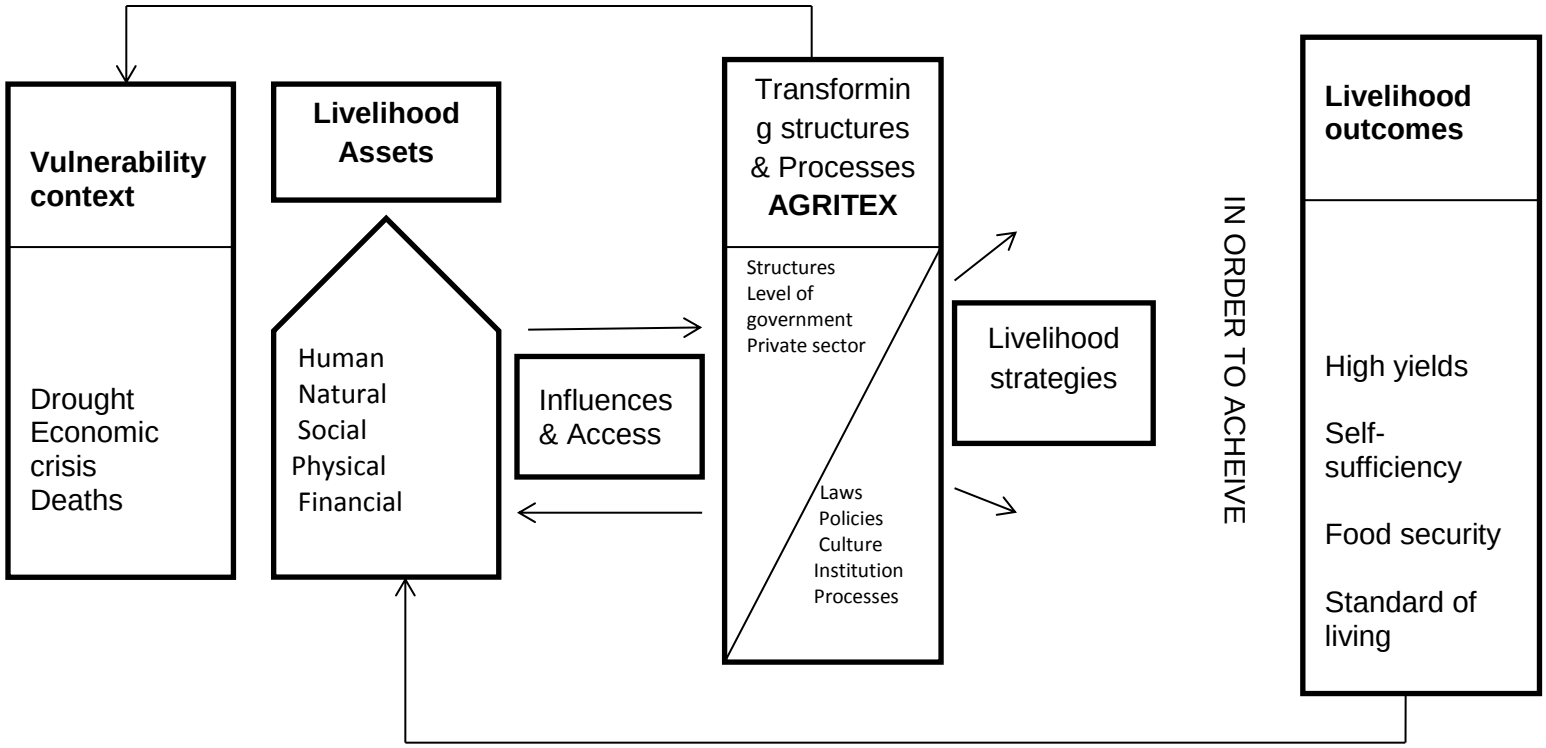
Figure 1: Sustainable Livelihood Framework

Source: DFID Sustainable Livelihood Framework Guidance sheet 2

"*A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living. A livelihood is sustainable which can cope with and recover from stress and shocks, maintain and enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in short and long term*." (Alinovi, D'Errico, Mane and Romano, 2010, p.6, cited in Chambers and Conway, 1992).

In this research, the sustainable livelihood framework is used to find the different livelihood strategies of the female headed household farmers. From the findings conclusions were drone and recommendations were made to assist AGRITEX change its service delivery systems to meet the needs FHH farmers in Marondera District.

Figure 2: Conceptual Framework



Sustainable Livelihood Framework, adapted from: DFID, 1999.

The framework showing drought, deaths, in the vulnerability context that give rise to increased number of female headed household farmers in Marondera district. However, since the livelihoods framework recognizes majority of the factors their interdependencies and relationships (Ellis, 2002) its use in impact studies can yield a potentially comprehensive picture of extension impacts on rural livelihoods. AGRITEX is a government organization in the transforming structure and being responsible for providing agricultural extension services to FHH farmers. Growing of different crops like cereals and oil seeds by FHH farmers is an alternative livelihood strategy to avoid the risk of total crop failure due to droughts as some crops can survive prolonged droughts; thereby FHH farmers can get some harvested crops. Diversification of crops can make farmers obtain high yields that will give rise to improved household food security. Surplus harvest can be sold and therefore get some income that will give rise to self-sufficiency and improve FHH farmers' standard of living. The de-facto-headed households can receive remittances from the migrated husbands who will be sending money back home.

2.8.1 Livelihood strategies

According to Alinovi, D'Errico, Mane and Romano (2010), livelihood strategies are the combination of activities that people choose to undertake in order to achieve their livelihood goals. The choice of strategies is a dynamic process in which people combine activities to meet their changing needs. For example, in farming households, activities are not necessarily confined to agriculture but often include non-farm activities in order to diversify income and meet household needs. Ellis (2003) further indicated that migration, whether seasonal or permanent, is one common livelihood strategy. Studies done by Horrel and Krishnan (2006) found that the de-facto and the de-jure female headed households (FHH) farmers have different livelihood strategies. The de-facto female headed households farmers tend to be better off in terms of income spent in their households since they can be able to hire labour, draught power and buy inputs like fertilizers if it is required. Depending on the interest and commitment of the FHH farmers, hiring labour and use of inputs may result in high yields. However, this situation also makes the de-facto female headed households farmers to be more dependent on their husbands. In some cases the de-facto female headed households farmers wait for their husbands who are in towns to make decisions on some farming operations. At times decision to go ahead with some farm operations may be delayed and can be disastrous if planting is done late. Getting remittances from their husbands can result in low production because the de- facto female headed households' farmers might have low interest in farming.

This group of female farmers have access to land and their decision-making power is high but they have few resources for production. Women farmers traditionally grow different type of crops like groundnuts, soya beans, vegetables to avoid risk of crop failures and as part of food security strategy for which female headed households feel more responsible because they have to feed their families (AGRITEX, 2002). Furthermore the study results of the study showed that household who have difficulties in accessing can use hybrids seeds and fertilizers when there is an input programme scheme on offer.

Smallholder farmers in Zimbabwe survive mainly on subsistence farming. Cattle provide draught power, transport, manure, milk, meat and source of cash income. Crop production provides most of the food for the household and surplus can be sold; the income got can be used to purchase some other food stuffs. Land preparation is mostly by ox-drawn plough, some weeding is done by ox-drawn cultivator and some transportation is by ox-drawn carts (Chiremba and Masters, n.d)

CHAPTER 3. METHODOLOGY

3. 1 Study Area

The study was conducted in Marondera, Province of Mashonaland East in Zimbabwe. Marondera is situated some 90 km away from Harare, the capital city of Zimbabwe. Mashonaland East Province is located in natural region II which is associated with intensive farming. The farming system is based on both livestock and crop production. The area receives an average rainfall which ranges between 750-1000mm per year. Growing a variety of crops is a strategy used by farmers living in Svosve communal area to reduce incidence of droughts. The site was chosen mainly because it is one of the districts with most female headed-households farmers (AGRITEX, 2009). Map 1 shows study area where the research was conducted see (Annex lll).

3.2 Research design

This research combined both desk study and case study with a qualitative approach to collect and analyse data. The desk study consisted in reading books and journals from the library and AGRITEX reports, browsing the internet about the needs of female-headed households, their constraints to extension services and AGRITEX's strategies. For the field work which aimed at collecting empirical data was carried out through interviews with the respondents and key informants. The selection of key informants was justified by their knowledge about the situation of female-headed households in the study area.

3.3 Research population and sampling

The research population size was 50 FHH farmers (28 de-facto and 22 de-jure) who live in Mupazviriho village according to the data base obtained from AEW. The target group comprises of two groups of FHH farmers because the farming system in the village is basically similar with respect to the combination of crop and livestock enterprises. The two groups are chosen for comparison purposes, especially looking at their livelihood strategies. From the research population, 5 de-jure and 5 de-facto FHH farmers were randomly selected for one on one interview to gather in-depth data. For the random selection, each household was given a number and the same number was written on small papers which were then put in two different calabashes. The small papers were mixed and respondents were selected. Advantage of random sampling is that it reduces bias and all female headed household farmers had an equal chance to be selected. The exercise was done with the help of the AEWs and the village headman. Two focus groups discussion were held with selected respondents from the two groups. The selection was made by the AEW and the village headman.

Finally the key informants were interviewed to consolidate data obtained from FHH farmers. The key informants are in this study composed of the District Agricultural Extension Officer and three AEWs to collect in-depth data since they are the people who are responsible for providing extension services to farmers in Marondera District.

Table 2: Summary of respondents

Respondent	Number of respondents	Remark
DAEO	1	Provincial and District heads of AGRITEX Mashonaland east province
AEWs	3	Providers of extension services to FHH farmers at ward and village level
FHH farmers	5	De-facto for interviews
	5	De-jure for interviews
	10	De-facto for FGD
	10	De-jure for FGD

3.4 Data collection

The research had a qualitative approach thereby, the researcher used semi-structured interviews to collect data. Semi-structured interviews (SSIs) are dialogues where important information develops out of casual conversation. It is a guided interview, where the types of questions that are asked usually emerge as the dialogue progresses. SSIs are considered the core of PRA and it is a tool that uses the so-called “six helpers”: what, who, when, how, where and why.

The individual interviews were conducted at homesteads for respondents and at work places for the key informants and this assisted the researcher to make some observations. Interviews were carried by the researcher herself and the language (shona) used was understood by the interviewees. Prior to the interviewees with the respondents, pretesting of the checklist was done in another village with two FHH farmers, one de-jure and one de-facto and some adjustments were done as it was found not to be clear on certain topics.

3.5 Data analysis

Data collected was summarized and presented using tables and descriptive statistics. The sustainable livelihood framework was used to analyse the livelihood strategies that are used by the FHH farmers to achieve the outcomes after AGRITEX provides agricultural extension services. The framework was adapted based on particular situations and circumstances on the ground like types of crops grown and inputs used.

CHAPTER 4. RESULTS

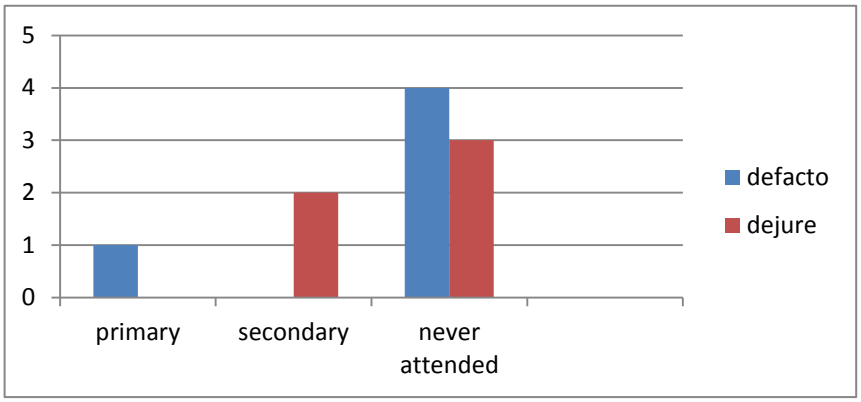
4.1 Demographic characteristics

- **Age of respondents**

From sampled households, the age category is between 36 to 58 years. 7 out of 10 households are below the age 50, while 3 households are over the age of 50.

- **Education level of respondents**

Figure 3: Household education level



As shown in fig (3) above, 7 out of 10 respondents are illiterate (never attended) school, 2 attained secondary education and (1) attained primary education.

- **Household size**

From the sampled households, 4 out of 10 respondents have 3 and 6 household members respectively whereas the other 6 of respondents have 4 and 5 household members respectively. The de-facto households have less number of household members than the de-jure who has larger number of household members. (annex 1)

4.2 Agricultural productivity in female-headed households' farmers

- **Farm size**

The research conducted at Mupazviriho village found that the total land owned by de-jure respondents is higher than the total land owned by the de-facto. In fact, the de-jure own 9.5 hectares while the de-facto own 6 hectares (annex 1). Both the de-facto and the de-jure have access to land but do not have control.

- **Inputs**

The inputs considered here are seeds; fertilizer and animal manure which are specifically used for maize production. (annex 1)

Seeds

During the field work, it came up that all the de-facto and 3 de-jure households used hybrids seeds while 2 de-jure used retained seeds. The users of hybrids seeds can afford them compared to those who cannot afford and they had resorted to use retained seeds. (annex 1)

Fertilizers

Results have shown that the number of the de-facto households who used fertilizers was higher than the number of the de-jure. Out of 5 de- facto 4 used fertilizers while 1 did not. Concerning the de-jure only 1 used fertilizer and the other 4 did not. (Annex 1)

Manure

The research has found out that the number of the de-jure using manure was higher than the number of the de-facto. 4 de-facto and 2 de- jure did not use any manure while the rest used manure. (Annex 1)

- **Implements**

The findings about the farm implements showed that 4 de- facto and 2 de-jure have access to farm implements. (Annex 1)

- La**bour**

Results of the research has found out that all households have access to family labour and 3 de-facto and 1 de-jure households can afford to hire labour. This is an indication that the de-facto households have more access to and control over financial resources. (Annex 1).

Table 3: Yields (kg/ha)

Kg/ha	**De-facto**	**De-jure**
0 - 500	0	1
5001 - 1000	1	2
1001 - 1500	0	1
> 1501	4	1

Source: Field work 2012

The figures in the table show that the de-facto households obtained higher yields than the de-jure households. 4 of the de-facto obtain yields that were greater than 1501 kg/ha. For the de-jure only 1 managed to get a yield that was greater than 1501 kg/ha. For the yield got, both the de-facto and de-jure have access to it but do not have control over it.

4.3 Livelihood strategies of both de-jure and de-facto FHH farmers

AGRITEX is a government institute responsible for providing agricultural extension to farmers but in this study the focus is on FHH farmers. AGRITEX has AEWs who work directly with FHH farmers so that they can adopt and use information transferred to them by extensionist. By adopting technologies, FHH farmers can get higher yields thereby increasing food security that will result in sustaining their livelihoods.

Drought, divorces and deaths of spouses are threatening the farming activities in Mupazviriho village and in Marondera district as a whole. FHH farmers have increased in the farming sector due to death of their spouses or divorces. Continuous drought occurrences and political unrest also causes husbands to migrate and leave behind females to take charge of the farming activities. Findings from the interviews showed that growing of different types of crops is a strategy to avoid risk of crop failure. 4 de-jure households are involved in casual labour. (annex 1).

Migration of the spouses in search of jobs in neighbouring farms, countries, and urban areas is also a strategy that is used in the village to supplement income as the results have shown that some households receive remittances from their husbands and relatives. (annex 1)

4.4 Extension services received by FHH farmers

Results from the categories individual interviews indicated that they are different extension approaches they receive from AEWs and they highlighted them as follows:

Table 4: Extension services received FHH farmers

Extension services	De-facto	De-jure
MFT	1	1
Agricultural shows	1	2
Farmer Field School	3	4
Look and learn	1	1
Competitions	2	1
Demonstrations	2	1
Field days	3	2
Farm visits	2	2

Source: Field work 2012

From two categories, concerning attendances, figures in the table indicated that 2 respondents received MFT from both the de-facto and the de-jure households. Field days and FFS have the highest scores due to cultural norms and values attached to events taking place in the village. Females have to help with cooking during field days. This also can be explained by the fact that the vegetables that are grown on the plots are sold and the income got is shared among the participants.

The least received services by both categories were MFT and look and learn. 1 de-facto and 1 de-jure households participated in MFT and look and learn programmes. Participation in agricultural shows was low for both de-facto and the de-jure households. One of the interviewed FHH farmers from the de-jure explained why she attended agricultural shows every year. In the box below is a story:

Box: 1

AEWS invite every farmer to attend the agricultural shows. I participate because last week there was an agricultural show at Mupazviriho primary school and I went there, displayed few cobs of maize, bundle of vegetables, small plate of groundnuts and some cucumbers and scoped the first prizes in all the items. I also managed to get a scotch–cart, one tone of compound fertilizers and half a tone topdressing. If it was you, to be honest, do you think I will stop attending these shows? Even last year I went and displayed a bundle of king onions and I managed to scope a knapsack sprayer as a prize.

- **MFT**

This research found out that most FHH farmers are illiterate so this programme is not appropriate for them. During data collection the researcher attended a graduation ceremony for the MFT graduates in the study area and observed that more male farmers were obtaining the MFT certificates than female farmers as indicated on the picture below. Figure 1, farmers attending MFT graduation ceremony in Mupazviriho village.

Fig 4: MFT graduation ceremonies

Source: Field work 2012

DAEO was handing over certificates to graduates of the MFT programme. From the three female farmers who graduated that day (1) was from the de-facto household and the other two were from the de-jure households.

- **Field days**

This approach is referred to as “feeding day” by many farmers, literally meaning that, it is a day when farmers are gathered to eat. The research found that 50% of the respondents (de-facto and de-jure households) already participated in field days. During focus group discussions with separate groups, the researcher found out that their participation in field days was lower than the 50%.The female farmers explained their low participation by the fact that they do not learn new farming methods. Furthermore, interviewed FHH farmers said that mostly they do not benefit anything from this extension service as they are tasked to do the cooking and they miss out on all the learning that farmers are given.

One of the FHH farmers had the following story to tell:

“Many people are invited to attend the field day so as a woman I am expected to do the cooking and feed visitors. What farming methods do I gain? So there is no point of saying field days are relevant to me”.

- **Farmer Field School**

This is not an ordinary FFS but female group growing vegetables. This is a typical female extension group service approach received by the FHH farmers through the vegetable garden where they meet AEWs on regular basis (two times per week) and they receive trainings on vegetable production. Trainings received cover land preparation, seed establishment, scouting of diseases pests and diseases, spraying, harvesting and marketing of the vegetables. The researcher visited the FFS in the study area and observed the operations that FHH farmers were carrying out.

Fig 5: FHH farmers in a FFS

a) FHH Farmers during land preparation

b) FHH farmer in a FFS with grown vegetables

FFS is one of the extension services to FHH farmers participate most, as the FHH farmers clearly stated that they get vegetables for home consumption and sale surplus to get some income. This sentiment was echoed by one of the FHH farmers. She narrated how FFS are important to them as illustrated below.

Box: 2

FFS is one of the best extension services we receive from AGRITEX because they source all the inputs required and the material for establishing the gardens for us. What is good about FFS is that vegetables are grown all year round which means that we can have constant source of income for the whole year. We can also manage to send our children to school and buy some other foodstuffs for our families. This is because vegetables always have a ready market in Marondera town. We meet so often with our AEW and other FHH farmers to learn and share ideas.

- **Competitions**

The research found that this approach was appropriate for FHH farmers who have access to and control over resources. Those resources include inputs and implements since they are able to utilize these inputs to produce crops which will enable them to compete. The hectreage planted to a certain crop is used as one of the selection criteria by AEWs to select farmers who can enter the competition. Seedco sponsors a competition called Seedco Good Farmer Competition which accommodates farmers who grow three or more varieties of seeds at a minimum hectreage of 0.5. Observations made by the researcher showed that the majority of the FHH farmers have land size ranges between 0.5-2 hectares (annex 1) which makes it difficult for most female-headed farmers to enter this competition. Results revealed that this service was relevant for resourceful farmers.

- **Look and learn**

The Look and learn is among one of the least attended approaches by FHH farmers. It is an approach where farmers visit other places close or far away from their area to learn what other farmers are doing in their fields so that they can also adopt. Results from focus group discussions showed that during the last farming season AGRITEX organized a tour for farmers to go and see how conservation agriculture was being implemented in Mutoko and Murehwa districts. The journey was for two days and only two FHH farmers attended and the other twenty seven were male farmers from the same village.

4.5 Extension needs of FHH farmers and their opinion on extension service delivery system

From individual interviews and focus group discussions it was found that majority of the FHH farmers have similar needs of which the major ones are highlighted below:

- Access to loans
- Farmer trainings that are offered during off peak season
- New information on other farming activities besides crops
- Programmes that accommodate all farmers with different education and resource backgrounds

- Trainings on both cash and food crops
- New technologies that reduce farm drudgery
- Marketing information system

Results showed that extension activities are done all year round, so few FHH farmers are able to attend especially during the peak periods as they are busy with their field activities. If it is a farmer training, they prefer off peak periods as this can accommodate FHH farmers who have to look after their households.

During the focus group discussion, a FHH farmer shared this sentiment:

Box: 3

My daughter, look at me. I am old and a widow, the AEWs except me to travel long distances to attend farmer trainings as well as travelling to receive inputs. I prefer they should service individual farmers at their village; but they (AEWs) complain that they are not mobile. So at the end of the day I stay at home and let the younger farmers attend their meetings and other farmer programmes on offer. I stay with my three grandchildren who go to school. So, if it is not a school holiday, I do not attempt to go for any extension programmes because I cannot leave my homestead without anyone taking care of it. When extension workers are involved in input distribution programmes, they only give the inputs to those farmers who attend their meetings. Most of the time, I am always left out.

4.6 Constraints of FHH farmers access to extension services

The results presented were obtained from the two focus group discussions. The common constraints (table 5) that FHH farmers face are the following: Lower education levels, gender roles, inputs, time, limited access to credit facilities, distance, social and cultural norms, irrelevant information, and FHH farmers.

Table 5: Constraints of FHH farmers' access to extension services

Constraints	De-facto	De-jure
Time	5	5
Gender roles	3	4
Distance	2	3
Lack of education	4	3
Irrelevant information	3	5
Socio-cultural	3	1
Lack of resources	2	3

Source: Field work 2012

Findings revealed that time were the most constraining factor. In fact, all the interviews (100%) said that time shortage was hindering them to attend to extension services. The socio-cultural factor was the least constraining factor among the respondents. 4 respondents, 3 the de-facto and 3 the dejure stated that socio-cultural values were the obstacle to their participation in extension activities.

The researcher found that the extension agents did not take female FHH farmers' constraints into consideration since they have a lot of work to do besides farming. So the time the extension agents provide services do not allow the FHH farmers to participate.

4.7 Extension strategies provided to FHH farmers

Table 6: Summary of findings from DAEO

Topic list	Responses
1.Extension strategies provided to FHH farmers	There are no specific programmes meant for FHH farmers but all the services provided cater for all farmers. Field days, FFS, agricultural shows, competitions, T and V, farmer trainings, look and learn, demonstrations, farm visits
2.Suitability and contribution of extension services on crop production	Farmers are trained on all farm crops from land preparation to harvesting by AEWS. The AEWs follow a certain action plan designed and they are supposed to accomplish the programme which encompasses all the activities that are to be delivered to farmers.
3. Ways to improve and adjust strategies to increase effectiveness of extension service delivery	There is a need to do a baseline survey to identify which extension services best suit farmers. An effective monitoring can improve services provided to farmers. Results to be forwarded to policy makers to be considered when designing agriculture services for farmers.

Source: Field work 2012

The table show the results obtained from an interview with DAEO of Marondera District.

Table 7: Summary of findings from 3 AEWs

Topic list	Agricultural Extension Workers		
	1	2	3
1.Extension strategies provided to FHH farmers	Field days, FFS, farmer trainings, look and learn, competitions, agricultural shows, farm visits	Shows, field days, competitions, FFS, farm visits, demonstrations, farmer trainings	Shows, filed days, competitions, look and learn, farmer trainings, farm visits
2. Suitability and contribution of extension services to FHH farmers on crop production	Information on food crop production is given to farmers as per request	I do farm trainings once a week, trainings cover both livestock and crop production	I give trainings on crop production from selection of type of variety up to harvesting. Field days on crops are meant for farmers to learn from their colleagues
3. Ways to improve and adjust strategies to increase effectiveness of extension service delivery to FHH farmers	Participatory approach will be better since farmers are asked what they want and they are part of the planning process. There is need to monitor and evaluate the entire service so that adjustment can be made. Transport should be available for mobility. Need assessment is important. encourage farmers from poor education backgrounds to participate.	If transport is available it is easier to cover all farmers. Extension approaches should be designed to suit different farmers not to follow what has been designed by superiors. I should be involved during planning and designing of extension programmes	There is need for the department to revisit some of the approaches and content so that they are client-oriented. There is need to remove some restrictions to participate in training programmes

Source: Field work 2012

Results obtained from interviews with the DAEO and the AEWs showed that there were no extension strategies that are specifically targeting FHH farmers but he mentioned that the strategies that are in place cater for all farmers. The following extension methods are provided, FFS, MFT, Shows, Field days, Demonstrations, Discussions competitions, look and learn, T and V. The only difference was that though AEWs are expected to provide all the methods as indicated by the DAEO, the AEWs never mentioned about providing the T and V.

4.8 Suitability and contribution of extension services to FHH farmers on crop production

The extension agents provide trainings and sometimes they are involved in input distribution. They also visit farmers, organise agricultural shows and demonstrations. The trainings offered by AGRITEX on crop production mainly focuses on cash crop while majority of female-headed farmers' main domain is food crop. During interviews with the individual respondents, it came out that very few were satisfied with the services provided to them compared to the majority who were still unsatisfied as explained already. The few who are satisfied with the services received from AGRITEX are the ones who have resources to follow the recommendations. AGRITEX indeed has the capacity to deliver extension services yet it still recommends inappropriate innovations like the use of hybrids seeds and external fertilizers in the context where majority of farmers lack resources.

4.9 Ways to improve and adjust strategies to increase effectiveness of extension service delivery to FHH farmers

Findings from the key informants revealed that, to increase effectiveness of extension service delivery system to FHH farmers, the following actions are needed:

- baseline survey
- action planning
- revisit some of the approaches and content
- analysis
- provision of transport

CHAPTER 5. DISCUSSIONS

5.1 Demographic characteristics

- **Educational level**

Level of education for the majority of FHH farmers is very low and this reduces their participation in many extension services since trainings offered by AGRITEX requires some degree of illiteracy. The findings of this research are in line with conclusions that Horrell and Krishnan came about the low level of education affecting effective participation of FHH farmers in extension services (Horrell and Krishnan, 2006).

- **Land**

The research found that 90% of the respondents own land. In reality, the land does not belong to them. For the de-jure the study found that the land they own is in the heir name except one household whose land is in her name because she inherited from the family who had all died. In the case of the de-facto, the land title is in the name of the spouse. Even if most FHH farmers do not have control over land they have access to it. Similar research conducted in Turkey found out that land title is in the names of the men (Durutan, n.d).

5.2 Livelihood strategies

- **Crops grown**

Growing of different types of crops is a strategy used to sustain the livelihood. In fact, Maize is grown by every household because it is a staple food in Svosve communal area. Vegetables grown are used as relish. Groundnuts grown is used to produce peanut-butter which is used to extract oil for cooking and the peanut butter can be used to mixed with vegetables that reduces costs of buying cooking oil. Sometimes, drought occurs in the study area and the diversification of crop reduces crop failure. The strategy of crop diversification was encouraged by the Government of Swaziland to reduce the impact drought on smallholder farmers (Salam and Mamba, 2012). In the case of Swaziland, the strategy failed because smallholder farmers had small pieces of land.

- **Inputs**

The study done in Mupazviriho village revealed that the de-facto FHH farmers have better access to inputs compared to the de-jure FHH farmers. The result of this is that, the de-facto households obtain higher yields than the de-jure households. In the research on “poverty and productivity in female-household in Zimbabwe”, Horrell and Krishnan (2006) got the same results.

- **Labour**

The research found out that the majority of the de-facto households can afford to hire labour while the majority of the de-jure cannot. The de-facto can afford due to remittances that are sent back home by the migrant husbands. Quartey (2006) in his work on “The impact of migrant remittances on household welfare in Ghana” found that remittances sent home had significant effect on income.

5.3 Extension services received by FHH farmers

The study showed there was variation of extension services received by FHH farmers though results showed that very few FHH farmers participated in many programmes. Respondents gave their reasons why they are found to be taking part in some activities. It has been noted that MFT certificate holders can access inputs and credit loans than farmers who do not have the certificates. If a programme has some benefits, FHH farmers tend to attend so that they can also some inputs. FFS proved to be an excellent extension approach because it contributed to increased vegetable crop production (FAO, 2008). A major drawback emphasized from the study is that the services are not client-oriented because not participatory.

Look and learn approach is not appreciated by majority of the FHH both the de-jure and de-facto as they mentioned that is not possible for them to travel and sleep out of their homes. This is echoed by studies done by Collett and Gale (2009) that women's triple roles hinder them to attend extension programmes especially when the programmes are meant to stay away from home for a day or more. The visiting FHH farmers said that they learnt from seeing but they cannot implement on their farms because they do not have enough labour that can help implement the innovation.

5.4 Extension needs and opinion of FHH farmers on extension service delivery system

Results of this research found that the needs of FHH farmers range from access to loan to new technologies that reduce farm drudgery passing by trainings that are offered during off peak season. According to the interviewees, access to loan would help them have access to farm inputs that would increase their yield (Diagne and Zeller, 2001). About the new technologies that reduce farm drudgery, early research by Collett and Gale (2009, p.9. cited Peña et al. 1996) found that "*labour-saving devices that cut down on domestic chores were another successful strategy that enabled women to overcome barriers to extension services. For example, mills that reduced food preparation time were the key to enabling women to attend farmer trainings*". During the different interviews with the respondents, it came out that trainings were delivered throughout the year. That situation does not take into consideration the peak season during which female farmers in addition to farm activities also have to take care the household chores making it difficult for them to attend trainings. Khan, Z., M. et al. (2011) found in their research that for agricultural extension trainings to be effective should not be carried out during peak season.

5.5 Constraints of FHH farmers access to extension services

In addition to what is already discussed concerning appropriate time for trainings, educational level of respondents and the gender roles, this section focuses on distance, irrelevant information and socio-cultural values.

- **Distance**

The interviews conducted showed that FHH farmers have limited mobility due to long distances that they had to travel to attend to some agricultural programmes. This is because the trainings are to be carried out at designated venue which is situated far away from farmers' homestead. In their research, Berger, DeLancey and Mellencamp (1984) found that for the effectiveness of the training targeting female farmers, training sessions should not be offered n a way that they do not stay away from their homes.

- **Irrelevant information**

Trainings offered on crop productions put more focus on cash crops that tend to be a male domain and no focus is put on food crops which seem to be a women domain. Contents of trainings do not meet FHH farmer's needs since the curriculum used has been designed for the past 30 years. Its focus on training is on livestock, crop production (cash crops), farm management and mechanization which are not the concern of female farmers. In their study on the "Perception Needs of Women Farmers for Agricultural Extension Services in Tigray, Northern Ethiopia", the researchers recommended that for agricultural trainings to be effective for female farmers, an analysis of the farming system should be conducted to identify their needs (Negusse, Aungsuratana, Thaipakdee and Intaratat, 2004). By identifying the needs of female farmers before conducting trainings will improve their participation.

- **Socio-cultural values**

Findings from the field showed that another factor that hindered FHH farmers' participation in extension activities. In fact, in the Zimbabwean society, frequent visits by extensionist to the female headed-framers are not socially accepted. Similar research was carried out in Turkey found that interaction between male extension agent and female farmers in the absence of the husbands was socially accepted (Durutan, n. d).

5.6 Ways to improve and adjustments to increase effectiveness of extension service delivery to FHH farmers

For effectiveness of extension service delivery, the following should be discussed:

- **Action planning**

During interviews with key informants, the researcher found out that there is a need to involve AEWs in all stages of planning and designing of agricultural extension programmes. Their ideas are in line with the result of the findings done by Tammer (2009) who indicated that early involvement of stakeholders in a project initial phase could it more credible and attractive. He further elaborated that early involvement could lead to useful and innovative propositions.

- **Revisiting of the curriculum**

The content of the trainings offered by AGRITEX to farmers were designed more than 30 years ago (FAO, 1994). Since then, the same type of curriculum has been followed. Nowadays, the farming system has changed and more and more women are taking a lead in farming. In those days, it was men who were responsible for farming and most of the curriculum was designed for them. To re-align the objective of AGRITEX to suit with the current agricultural farming system dominated by female farmers, it is necessary to revisit the curriculum. This because the female farmers' increased role in agriculture cannot be ignored. This gives rise to feminization of agriculture (Lastarria-Cornhiel, 2008).

CHAPTER 6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Most of the approaches that are being used by AGRITEX are not appropriate for the majority of the FHH farmers except for the FFS which is rather directive and not very participatory. Farmer trainings like the MFT are not appropriate for most of the FHH farmers because they are illiterate. Most FHH farmers attend to FFS and shows so that they can access inputs. When FHH farmers attend field days they do not learn anything since they will be busy cooking for the visitors. AGRITEX's focus is on using external inputs while most of the FHH farmers cannot afford them. There are big differences between FHH farmers, so whatever extension approach is used there are some female farmers who are not interested in the services provided.

Findings of this study indicate that de-jure FHH farmers are not extraordinarily income poor but they do lack assets which are mainly required when carrying out farming activities. It limits female farmers' ability to grow a variety of crops and use a wide range of inputs. So there is a tendency by the de-jure to use fewer inputs, therefore their yields are lower than majority of the de-facto households. De-facto FHH farmers can afford to buy inputs and that made it possible for them to grow different type of crops. As the de-jure FHH farmers, they had difficulties to access extension services.

Extension services provided by AGRITEX to FHH farmers do not fit in their livelihood strategies. The extension needs for both the de-jure and the de-facto FHH farmers are the same as shown by this research. However, the major difference between these households is the livelihood strategies employed during crop production especially on the use of inputs like fertilizers and pesticides. Whereas, the de-facto tend to use more of inputs to obtain high yields, the de-jure use less inputs and get lower yields. Despite all the commitment of time, resources and manpower to the provision of extension services to the FHH farmers, the approaches or methods used are not bringing the desired impact on the ground.

The study revealed that AGRITEX does not have specific programmes that are meant for FHH farmers. Programmes on offer cater for all farmers. One typical example is the MFT programme which is beyond reach of many FHH farmers as the results showed that most of them are less educated. The research revealed that the programmes being implemented were designed long back and they are not constantly reviewed to meet the existing agricultural system.

The research found that the hindering factors preventing FHH farmers to access extension services are time, gender role, distance between the trainings centres and the FHH farmers' homestead, lack of education excluding them from trainings, irrelevant information and lack of resources.

The research concluded that focus of AGRITEX is very much on improving yield and is not taking other livelihoods into consideration. Its focus is mainly on external inputs while a lot of farmers cannot afford external inputs and do not have access to it. Most of extension methods ask for high level of literacy while the majority of the FHH farmers are illiterate.

6.2 Recommendations

It is necessary for AGRITEX to conduct needs assessments so that they can design their programmes that can accommodate the female farmers. Regular monitoring and evaluation of the extension programmes offered to farmers will be helpful to see whether farmers are following AGRITEX,s recommendations. If farmers are not following recommendations, AGRITEX has to find out why are farmers not following and make some adjustments.

AGRITEX should establish linkages with other extension service providers in that area especially NGOs and private companies so that they can combine their programmes.

AGRITEX should influence researchers so that they can come up with the recommendations that fit into the current farming system.

It is important for AGRITEX to revise and organise its ways and methods of extension service delivery system to the policy makers. Farmer trainings have to be organized in such a way that illiterate farmers can benefit by making use of the local language and audio-visual aids rather than written material.

AGRITEX should adopt participatory approach system during its service delivery.

AGRITEX should encourage farmers to attend extension programmes by taking into consideration their constraints like timing and gender roles.

While some of the recommendations suggested are practical, they are some limitations which need to be addressed for recommendations to be implemented. AGRITEX lack funding and for it to implement these recommendations it can collaborate with other extension service providers.

References

AGRITEX Report. 2002. Ministry of Agriculture and Mechanisation. Zimbabwe.

AGRITEX Report, 2009. Agriculture Policy for Zimbabwe. Zimbabwe: Ministry of Agriculture.

Alinovi, L., D'Errico, M., Mane, E. and Romano, D., 2010. Livelihoods Strategies and Household Resilience to Food Insecurity: An Empirical Analysis to Kenya. Available at: <http://erd.eui.eu/media/BackgroundPapers/Alinovi-Romano-D'Errico-Mane.pdf> [Accessed 26 August 2012]

Ayanwuyi, E. and Zaka, K., 2001. Analysis of extension service needs of women cassava farmers. Continental journal of agricultural economics [online] Available at:< http://www.wiloludjournal.com/ojs/index.php/cjage/article/view/298/pdf [09 September 2012].

Barrett, C., J., n.d. The Economic Role of Cattle in Communal Farming Systems in Zimbabwe. Available at: < http://www.odi.org.uk/work/projects/pdn/papers/32b.pdf> [Accessed 27 September 2012]

Beaman, L. and Dillon, A., 2009. Do household definitions matter in survey design? Results from a randomized survey experiment in Mali. Available at: < http://siteresources.worldbank.org/INTFR/Resources/475459-1259791405401/BeamanDillon_HHdef_mali.pdf> [Accessed 27 September 2012]

Berger, M., DeLancey, V. and Mellencamp, A., 1984. Bridging the gender gap in agricultural extension. Available at: < http://pdf.usaid.gov/pdf_docs/PNAAR377.pdf> [Accessed 30 September 2012]

Chimhowu, A. and Woodhouse, P., 2006. 'Officially' Forbidden but Not Suppressed: Vernacular Land Markets on Communal Lands in Zimbabwe. A Case Study of Svosve Communal Lands, Zimbabwe. available at: < http://www.mpl.ird.fr/colloque_foncier/Communications/PDF/Chimhowu.pdf> [Accessed 28 September 2012]

Chimhowu, A. and Woodhouse, P., 2008. Communal Tenure and Rural Poverty: reflections on land transactions in Svosve Communal Area, Zimbabwe. available at: < http://www.bwpi.manchester.ac.uk/resources/Working-Papers/bwpi-wp-3508.pdf> [Accessed 27 September 2012]

Chiremba, S and Masters, W., n.d. The Experience of Resettled Farmers in Zimbabwe. Available at: < http://www.africa.ufl.edu/asq/v7/v7i2a5.htm> [Accessed 9 July 2012]

Chiwenga, E., F., 2011.The role of IPR on maize output in Zimbabwe. Available at: < http://mpra.ub.uni muenchen.de/38570/1/MPRA_paper_38570.pdf> [Accessed 27 September 2012]

Collett, K. and Gale, C., 2009. Training For Rural Development: Agricultural and Enterprise Skills for Women Smallholders. Available at: < http://t4rd.skillsdevelopment.org/pdf/Review%20of%20Practice.pdf> [Accessed 7 July 2012]

Connolly, M. and Hagmann, J., (2000). Communal and institutional transformation in public agricultural services in Zimbabwe in Services for Rural Development: Issue No. 5, Eschborn, Germany. Availablt at: <http://picoteam.org/publications/pdf/communal%20and%20institutional.pdf Accessed [6 September 2012].

Davis, E., K. 2008. Extension in Sub-Saharan Africa: Overview and Assessment of Past and Current Models, and Future Prospects. Available at: < http://www.aiaee.org/attachments/111_Davis-Vol-15.3-2.pdf> [Accessed 28 September 2012]

Diagne, A. and Zeller, M., 2001. Access to Credit and Its Impact on Welfare in Malawi. Available at: http://www.ifpri.org/sites/default/files/publications/rr116.pdf [Accessed 30 September 2012]

Durutan, N., n. d. Agricultural Extension for Women. Available at: < http://ressources.ciheam.org/om/pdf/c02-4/94400046.pdf> [Accessed 8 August 2012]

Ellis, F., 2003. A Livelihoods Approach to Migration and Poverty Reduction. Accessed at: < http://www.ruta.org:8180/xmlui/bitstream/handle/123456789/542/RN76.pdf?sequence=1> [Access 12 August 2012]

Ellis, F., 2002. Rural Livelihoods and Diversity in Developing countries. Oxford. UK

FAO, 2010a. Information and extension. Available at: < http://www.fao.org/sofa/gender/themes/information-and-extension/en/> [Accessed 28 September 2012]

FAO, 2010b. Women in Agriculture: Closing the gender gap for development. Available at: < http://www.fao.org/docrep/013/i2050e/i2050e03.pdf> [Accessed 28 September 2012]

FAO, 2010c. Investments in agricultural extension and information systems. Available at: < http://www.g-fras.org/fileadmin/UserFiles/Documents/Frames-and-guidelines/Financing-RAS/Investments-in-Agricultural-Extension-and-IS.pdf> [Accessed 28 September 2012]

FAO, 2008. Farmer field schools on land and water management in Africa. Available at: < http://faculty.arec.umd.edu/jhanson/Extension-Hanson_Johnson/Extension_PDF/Farmer%20Field%20%20Schools%20-%20Africa.pdf. [Accessed 30 September 2012>

FAO, 2002. The agricultural extension system in Zimbabwe. Available at: < http://www.fao.org/docrep/005/AC913E/ac913e05.htm> [Accessed 28 September 2012]

FAO, 1995a. Fact sheet: Zimbabwe - Women, agriculture and rural development...Available at: < http://www.fao.org/docrep/V9101e/v9101e01.htm#TopOfPage> [Accessed 27 September 2012]

FAO, 1995b. Improving the relevance and effectiveness of agricultural extension activities Available at: < http://www.fao.org/docrep/V4805E/v4805e04.htm#P312_47655> [Accessed 27 September 2012]

FAO, 1994. Gender issues, constraints and potentials in AGRITEX: an overview...Available at: http://www.fao.org/docrep/X0240e/x0240e05.htm#P440_49644 [Accessed 27 September 2012]

FAO, n.d., The farming systems approach to development and appropriate technology generation. Available at: < http://www.fao.org/docrep/v5330e/V5330e03.htm> [Accessed 27 September 2012]

FAO, n.d. The agricultural extension system in Zimbabwe. Available at: < http://www.fao.org/docrep/005/AC913E/ac913e05.htm> [Accessed 29 September 2012]

Foti, R. et al. 2007. Determinants of Farmer Demand for "Fee-for-Service" Extension in Zimbabwe: The Case of Mashonaland Central province Available at: < http://www.aiaee.org/attachments/article/126/Foti%2014.1-8.pdf> [accessed 15 august 2012]

Gallagher, K., D., n. d Community study programmes for integrated production and pest management: Farmer Field Schools. Available at: < http://www.share4dev.info/kb/documents/3195.pdf> [Accessed 29 September 2012]

Hagmann, J., Chuma, E., Murwira, K. and. Connolly, M., 1999. Putting Process into Practice: .Operationalising Participatory Extension. Available at: < http://www.picoteam.org/publications/pdf/Operationalising%20Participatory%20Extension-1999.pdf> [Accessed 20 August 2012]

Hanyani-Mlambo, B., T., 2002. Strengthening the pluralistic agricultural extension system:

A Zimbabwean case study. Available at: < ftp://ftp.fao.org/docrep/fao/005/AC913E/AC913E00.pdf> [Accessed 17 July 2012]

Horrell, S. and Krishnan, P. 2006. Poverty and Productivity in Female-Headed Households in Zimbabwe. Available at: < http://www.dspace.cam.ac.uk/bitstream/1810/194684/1/0663.pdf> [Accessed 27 September 2012]

Khan, Z., M. et al. 2011. Training needs of agricultural extension agents in khyber pakhtunkhwa. Available at: < http://www.aup.edu.pk/sj_pdf/TRAINING%20NEEDS%20OF%20AGRICULTURAL%20EXTENSION.pdf> [Accessed 30 September 2012]

Lastarria-Cornhiel, S., 2008. Feminization of Agriculture: Trends and Driving Forces. Available at: < http://siteresources.worldbank.org/INTWDR2008/Resources/2795087-1191427986785/LastarriaCornhiel_FeminizationOfAgri.pdf> [Accessed 27 September 2012]

Mawire, O., 2009. Training needs analysis and transfer-of-learning (tol): a case of the organic farming training programme, Goromonzi district, Zimbabwe. Available at: http://edepot.wur.nl/166779 [Accessed 14 July 2012]

Mlambo, H., 2000. Strengthening the pluralistic Agricultural extension system: A Zimbabwean case study<http://www.fao.org/sd/ip/resources/ip_publications.htm [Accessed 2 July 2012].

Mudukuti, E., A. and Miller, L., 2002. Factors Related to Zimbabwe Women's Educational Needs in Agriculture. Available at: < http://www.aiaee.org/attachments/273_Mudukuti-Vol-9.3-6.pdf> [Accessed 27 August 2012]

Negusse, G., Aungsuratana, A., Thaipakdee, S., Intaratat, K., 2004. Perception Needs of Women Farmers for Agricultural Extension Services in Tigray, Northern Ethiopia. Available at: <

http://www.rdi.kps.ku.ac.th/web-journal/e%20journal%2046-49/Y%202/N1/kpsv2n1-3.pdf> [Accessed 30 September 2012]

Quartey, P., 2006. The impact of migrant remittances on household welfare in Ghana. Available at: < http://www.aercafrica.org/documents/rp158.pdf> [Accessed 30 September 2012]

Quisumbing,A., R. and Pandolfelli, L., 2009. Promising Approaches to Address the Needs of Poor Gemale Farmers. Available at: < http://www.ifpri.org/sites/default/files/publications/ifpridp00882.pdf> [Accessed 5 August 2012]

SADC, 2008. Situation Analysis of Agricultural Research and Training in the SADC Region-ZIMBABWE. available at: < http://www.sadc.int/fanr/agricresearch/icart/inforesources/situationanalysis/ZimbabweSitAnalysisFinalReport.pdf> [Accessed 27 September 2012]

Salam, A. and Mamba, E., 2012. Approach used by Government and Non-Governmental Organizations (NGOs) in promoting crop production and its implications on Food Security and Hunger in Rural Swaziland: A Case Study of Sithobela Area. Available at: < http://www.jsd-africa.com/Jsda/Vol14No3-Summer2012A/PDF/Approach%20Used%20by%20Government%20and%20Non-Governmental.Abul%20Salam%20and%20Epherem%20Mamba.pdf> [Accessed 30 September 2012]

Tammer, D., M., 2009. Early stakeholder involvement in projects. Available at: < http://www.technologieeninnovatie.hu.nl/~/media/sharepoint/Lectoraat%20International%20Business%20and%20Innovation/2011/TAMMER%20MD%202008%20Early%20stakeholder%20participation%20in%20projects%20PM%20World%20Today%20volume%20XI%20issue%20IV%20April%202009.pdf> [Accessed 30 September 2012]

Umeta G., Lemecha, F.and Mume, T., 2011. Survey on women access to agricultural extension services at selected districts of Mid Rift Valley of Ethiopia. Available at: < http://www.academicjournals.org/JAERD/PDF/Pdf%202011/Mar/Umeta%20et%20al.pdf> [Accessed date 6 September 2012]

USDA, 2004. Agro-climatic Zones in Zimbabwe. Available at: < http://www.fas.usda.gov/pecad2/highlights/2004/06/zimbabwe/images/aez_zimababwe.htm> [Accessed 27 September 2012]

Annex I: Summary findings from household interviews

Topic list	**Respondents**									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Household type	de-facto	de-facto	de-facto	de-facto	de-facto	de-jure	de-jure	de-jure	de-jure	de-jure
Household size	4	3	5	3	5	6	5	4	4	6
Age	39	36	44	55	40	51	48	58	38	42
Education	Never attended	Grade 7 primary	Never attended	Never attended	Never attended	Never attended	Form 4(secondary)	Never attended	Form 2(secondary)	Never attended
Land size(ha)	1	1	1.5	0.5	2	2	3	1.5	2	1
Land ownership	Own	Own	own	own	own	own	inherited	own	own	own
Access to labour	Family	Family, hiring	family	Family, hiring	Family, hiring	family	Family, hire	family	family	family
1.Crops grown	Maize, groundnuts, sweet potatoes, vegetables	Maize, grounduts, roundnuts, finger millet	Maize, vegetables	Maize, sweet-potatoes, sugar-beans, groundnuts	Maize, groundnuts, cowpeas, roundnuts, vegetabl	Maize, cowpeas, groundnuts, sweet potatoes,	Maize, tobacco ,g/nuts, sweet-potatoes, vegetables	Maize, vets	Maize, groundnuts, cowpeas , vegetables	Maize, vegetables,

					es	vegetables				
2. inputs used/ha of maize Seed	20kg hybrid seed,4*50kgcompD,2*50kg AN	25kg hybrid seed,4*50kg D,2*50kg AN, herbicides	20kg hybrid seed	25kg hybrid seed,6*50kg D,4*50kg AN, manure	25kgbrid seed,6*50kg,4*50kgAN,manure	20kg retained seed, manure	20kg hybrid seed,6*50kg D,4*50kgAN, manure	25kg hybrid seed, manure	15kgretained seed	25kkghybrids seed,2*50kg D
3.Yields/ha of maize (kg)	1750	3100	600	3250	4000	850	3500	1025	450	800
4.Implements	Plough, wheel barrow	Plough, cultivator, scotchcart	No implements	Plough, scotchcart, cultivator	Cultivator, wheel barrow, plough, scoth-cart, harrow	No implements	Plough, cultivator, harrow, scotch-cart, peanut butter making machine	Plough, scotch-cart, plough	No farm implements	No farm implements
5.Off/Non-farm activities	selling peanut butter, vegetables, fishing, remittances	Mate weaving ,barter trading-exchanging clothes with maize, remittances	Casual labour ,selling of wild fruits	Receive remittances	Receive some remittances from husband	Weaving, clay pot moulding, casual labour, selling of wild	Preparing peanut butter for sale	Mate weaving. Selling fish Remittance from a niece, casual	Fishing, casual labour, sell wild fruits	Casual labour, vegetable selling, fishing, remittances from an elder son, selling of wild fruits

						fruits		labour		
6.Extension services received	Field days, farm visits, demonstration	FFS, , MFT, look and learn, competition	Show, field days, FFS	Demonstrations, Farm visits	FFS, competitions	Farm visits, field days, FFS	Demonstrations, competitions, look and learn, MFT, farm visits	FFS	shows, FFS,	FFS, Shows, field days
7.extension needs/opinions	New information, technology that can be adapted and used by female farmers like processing techniques, farmers trainings that come off-peak periods, programmes that accommodate every farmer	New agricultural information, farmer trainings to be done closer to their homestead, remove basic requirements for enrolment to trainings like the MF, trainings on food crops	Information on sampling , information how to access credits	New information on food crops. access to loans, information o non-agricultural projects	Services should be provided late morning or off peak season, new information	Farmers trainings should be seasonal**,**	new information, trainings that are participatory, access to loans, credits, trainings on both food and cash crops, farmer trainings should be at village level, proper timing of programmes	Information on non-agricultural activities, all programmes should be administered at village level to be at village level	Relevant approaches, trainings on food crops, new information other crops like mushroom production, farmer trainings that are provided during school holidays or off peak season	Information on how to access inputs, other varieties, all farmer trainings to accommodate farmer with poor educated backgrounds
8.constrains to extension services	time, lack of resources, house chaos, trainings venues are very far, husband do not grunt	no time to attend, lack of resources irrelevant information, work load, favouritism,	distance, husband at times do not grunt permission, time, lack of	Age, distance, workload , lack resource, time, husband refusal,	Time, lack of resource, irrelevant information, no education	Age distance, financial constrained to obtain	Time, distance, workload, irrelevant information, socio-cultural	Distance, age, work load, lack of resource, time, no educatio	irrelevant information, workload, time, lack of resources	Time shortage, work load and resources, no education, irrelevant information

	permission, irrelevant information, no education	irregular farm visits of AEWs husband refusal	resource, no education	no education		resources. Time, no education, irrelevant information		n, irrelevant information		

Annex II: Checklist for female headed households' farmers

Section A: Household demographic characteristics

- Age of respondent
- Type of household
- Household size
- Household's level of education
- Religion of Household
- Land ownership

Section B: Sustainable Livelihood Approach

- **Vulnerability context**
- **Assets**
  - Human
  - Natural
  - Social
  - Financial
  - Physical

Livelihood strategies

- **Agriculture**
  - type of crops grown
  - land size
  - type and quantity of inputs used
  - quantity used
  - access to inputs
  - access to Labour
  - yield achieved
  - off- farm activities
  - non- farm activities

Section C: Extension Services received by FHH farmers

- Type of extension services received by FHH farmers
- Extension needs of FHH farmers
- Opinion of FHH farmers on extension service delivery system
- Constrains of FHH farmers participate in extension activities
  - content
  - distance
  - venue
  - time
  - socio-cultural
  - gender roles
  - cost
  - education
  - age

Annex: III: Checklist for key informants and AEWs

- Extension strategies provided to FHH farmers
- Suitability and contribution of extension services to FHH farmers on crop production
- Ways to improve and adjust strategies to increase effectiveness of extension service delivery

Annex IV: Map of Zimbabwe showing Mashonaland East Province and Marondera district.

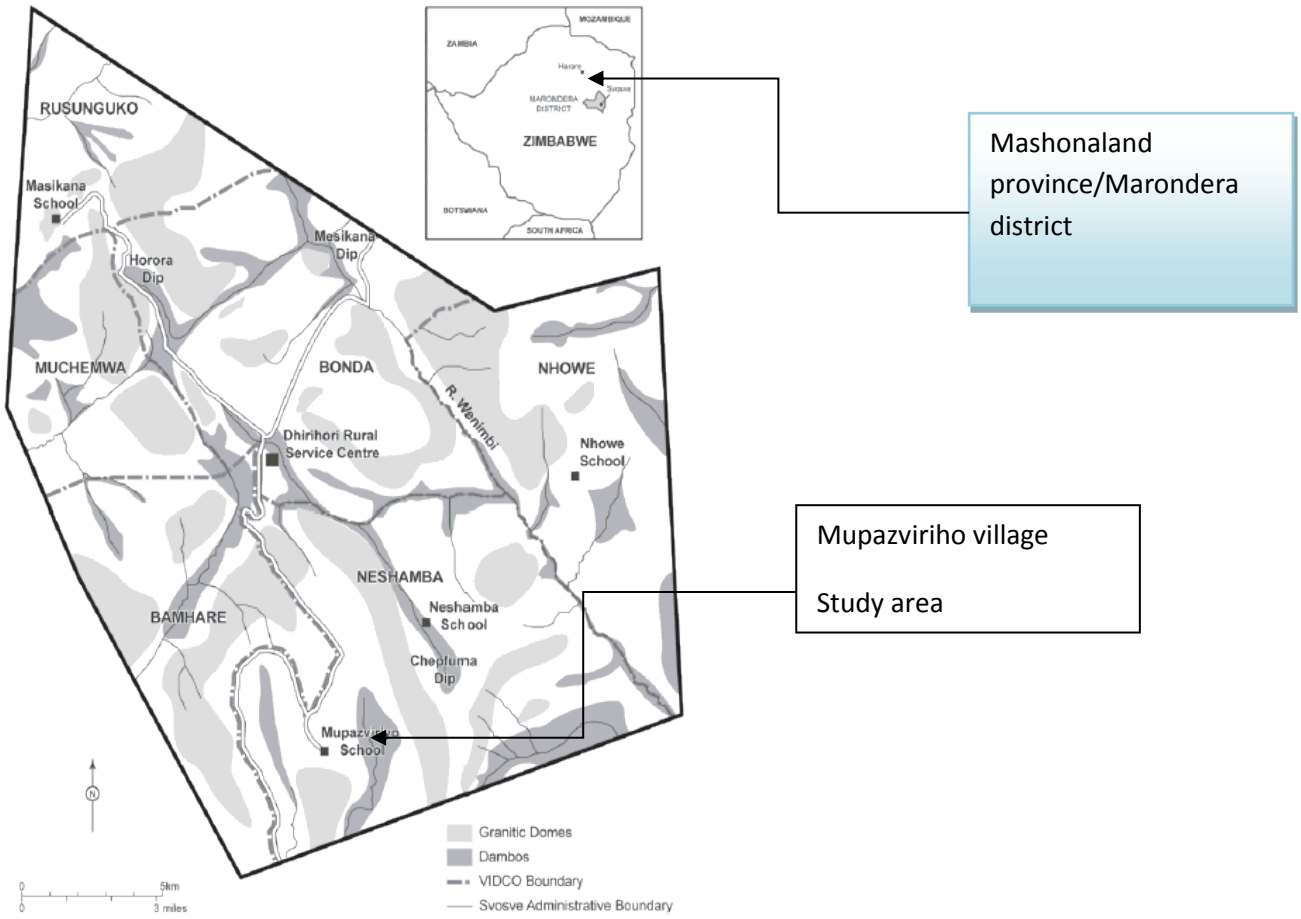


FIGURE 1 Map of Svosve Communal Area

Source: http://www.google.nl/imgres?q=zimbabwe/marondera+district. Accessed 28 August 2012