GENDER MAINSTREAMING IN CONSERVATION AGRICULTURE: LESSONS FROM CONSERVATION AGRICULTURE PROGRAMME II IN MAPANZA, SOUTHERN ZAMBIA.

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BY

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Declaration

I, Hachiboola Priscilla, declare that the dissertation which I hereby submit for the Master of Science Degree in Environmental and Natural Resource Management at the University of Zambia, is my own work and has not previously been submitted for any other degree at this or another institution.

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Certificate of Approval

This dissertation by Priscilla Hachiboola entitled Gender Mainstreaming in the Conservation Agriculture Programme II in Mapanza; Southern Zambia has been approved as partial fulfillment for the award of Master of Science Degree in Environmental and Natural Resource Management by the University of Zambia.

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Dedication

To my family and friends

Abstract

This study sought to examine gender mainstreaming (GM) in the Conservation Agriculture (CA): Lessons from Conservation Agriculture Programme II (CAP II) in Mapanza area, Choma District of Zambia. The objectives of the study were to assess the extent of participation of women and men in the CAP II and to examine how the women and men farmers in the study area relate to various CA practices. Three Focus group discussions, key informant interviews, 30 questionnaires and secondary data were used to collect data. The data was analysed using descriptive statistics and content analysis.

In terms of the extent of gender representation in the implementing structure, results indicated a dominance of men which stood at 91 percent compared to nine percent of women. This is due to lack of a clear gender policy. Furthermore, training materials showed that the English language that is used in developing training materials is not easily understood by the gender that is illiterate. Results also showed that the extension training approach is open, flexible and voluntary giving women and men high access to extension trainings. However, other factors such as household responsibilities for women and off farm income generating activities negatively influenced women and men's attendance of training.

As regards gender relations in CA practices, 27 percent women compared to 33 percent men practiced crop rotation. The need to improve household food security for women compared to access to seeds, herbicides and market for men influenced crop rotation. Furthermore, 33 percent of women compared to 27 percent of men practiced crop residue retention. On one hand, proximity of women's fields to their homesteads positively influenced their retention of crop residues. On the other hand, the large fields under men's control were far away from homes making it difficult to retain crop residues. The majority of the men (80 percent) reported using animal draft powered ripping compared to 33 percent of women. This is because men had higher access to animal draught, rippers and social capital. Results also showed that 73 percent of the women compared to 27 percent men used basins. This was attributed to lack of animal draught, rippers and the need for women to mitigate food insecurity by planting early. The CAP II did not consider mainstreaming gender in the design of farming implements such as the chaka hoe that increases drudgery to women.

This study concludes that GM is poorly implemented in CAPII in terms of women representation in the implementing structure, training materials, CA tillage systems and in the planning to monitoring and evaluation phases of the CAPII. There is need for the programmes in CA to have a clear gender policy and implementation strategies that will ensure mainstreaming of gender from planning point to farming households, to enhance equal participation of women and men.

Key Words: Gender Mainstreaming, Conservation agriculture, Conservation Agriculture Programme II, Women and Men

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List of Acronyms

ADFB:	African Development Bank
ADPR:	Animal Draught Powered Ripping
AER:	Agriculture Ecological Region
ALINe:	Agricultural Learning and Impacts Network
ASP:	Agriculture Support Programme
CA:	Conservation Agriculture
CAP II:	Conservation Agriculture Programme II
CFU:	Conservation Farming Unit
CMC:	Choma Municipal Council
FAO:	Food Agricultural Organization
FWCW:	Fourth World Conference on Women
GAD:	Gender and Development
GM:	Gender Mainstreaming
HAF:	Harvard Analytical Framework
SSA:	Sub Saharan Africa
UN:	United Nations
UNDP:	United Nations Development Programme
UNESCO:	United Nations Economic and Social Council
UNGEI:	United Nations Girls' Education Initiative
WAD:	Women and Development
WID:	Women in Development
ZNFU:	Zambia National Farmers Union

CHAPTER ONE

INTRODUCTION

In this chapter, the background of the study is given. This is followed by the problem statement. The chapter also gives the aim, objectives and research questions of the study. Lastly, the chapter explains the significance of the study and the outline of the dissertation.

1.0 Background

Gender gaps in development opportunities, access to, ownership of, control over resources and resource utilization between women and men continue to be a major problem in the smallholder farming sector of most developing countries (Food Agricultural Organisation (FAO), 2009). However, the existence of gender gaps in agriculture does not mean a total failure of gender mainstreaming implementation. Momsen (2010) defines gender as the socially constructed attributes and opportunities associated with being a male and female. According to FAO (2011a) gender gaps in agriculture impose challenges on smallholder farmers which undermine the contributions of the sector to meeting the food demands, economic growth and well-being of most developing countries.

Reducing gender gaps would produce significant development gains by increasing agricultural performance, reducing poverty and hunger and promoting economic growth (World Bank, 2014). Thus, the United Nations Development Programme (UNDP) (2001) argued for the implementation of Gender Mainstreaming (GM) approaches or strategies in agriculture to deal with obstacles to equal participation of women and men farmers. GM is the integration of a gender perspective and analysis into all stages of designing and evaluating projects, policies and development programmes (Grigorian, 2007).

GM is one of the options for reducing gender gaps in development (United Nations (UN), 2011). It was also observed by Verloo (2001) that GM helps to make changes in goals, strategies, and actions to ensure that both men and women can influence, participate in and benefit from development processes. The advantage of a GM approach is that it allows for the advancement of gender equality and equity regardless of whether it is women or men who are disadvantaged and whose position needs to be addressed. Evidence shows some positive impact of GM including an increase in agricultural productivity and food security

among women and men in Zambia (Farnworth and Munachonga, 2010).

However, GM exists mostly in theory and not in practice (Daly 2005; Matshidiso and Mamoloko 2014). The reasons for this failure of mainstreaming gender are numerous including much focus based on women rather than addressing unequal gender structures (Brouwers, 2013); understaffing, weak linkages across line ministries, lack of political will, low budget allocations (Nkunda 2012); no clear measures for gender equity and equality (GRZ, 2012); inconsistent gender policies, lack of accountability mechanisms, and lack of understanding of the concept among implementing personal (Brouwers, 2013).

The extent to which new farming systems such as conservation agriculture (CA) are contributing to the reduction of gender gaps through GM is largely not documented. FAO (2008) defines CA as a package of agronomic technologies that allow for minimum disturbance of soil, maintenance of soil cover with residues and spatio-temporal diversification of cropping systems. This study conceptualizes CA practices as a system comprising the following agronomic practices: crop residues on the soil surface, crop rotations with legume, use of minimum tillage of land; animal draught ripping and basin digging. These are based on the universally agreed upon three principles of CA namely minimum mechanical soil disturbance, diversified crop rotation and permanent soil cover.

CA has been promoted in many countries worldwide. The current largest global adopters of conservation agriculture include USA, Brazil, Argentina, Australia and Canada (Friedrich *et al*., 2011). Zambia is considered a pioneer of CA in Southern Africa. It has been extensively promoted by the Conservation Farming Unit (CFU), a unit under the Zambia National Farmers Union (ZNFU) (Umar *et al*., 2011). The ZNFU is a national membership based organization representing small and large scale farmers and agribusinesses. It promotes and safeguards the interest of members involved in the agricultural sector in order to achieve sustainable agriculture, economic and social development (ZNFU, 2011).

The CFU has been implementing the Conservation Agriculture Programme (CAP), since 2006. The CAP was started with the first phase CAP I and was followed by the second phase, CAP II. The purpose of CAPII was to enhance the adoption of climate resilient environmentally sustainable and agronomic practices through CA (CFU, 2006). According to CFU (2011a), the CAP II was planned to last a period of five years (2011-2015) and

targeted 60,000 small scale farmers. The CFU operates in four project regions namely Southern, Central, Western and Eastern (figure 1.1 below)

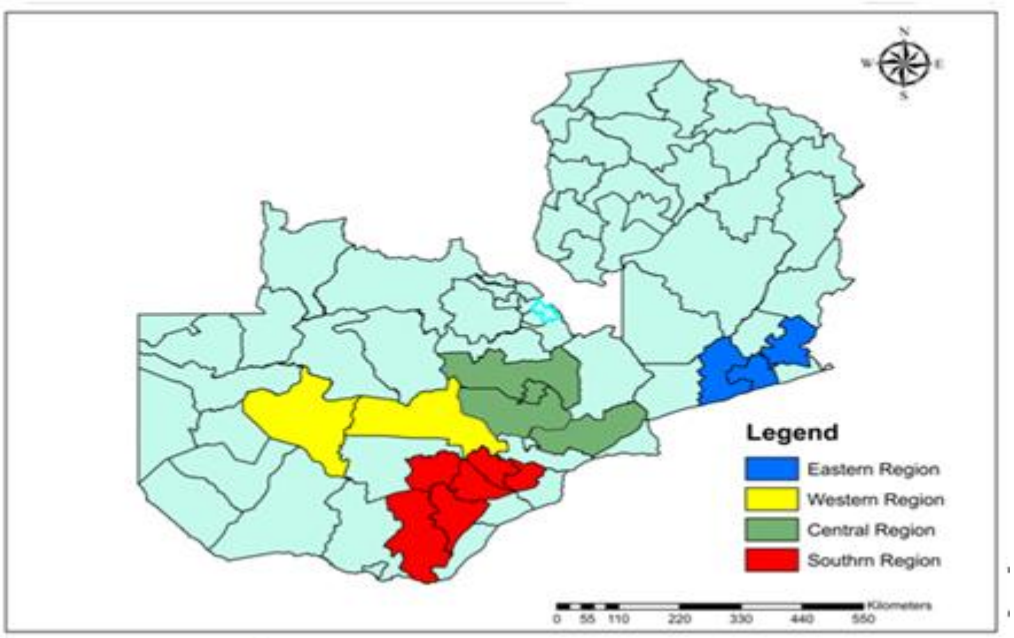

Figure 1.1: Conservation Agriculture Programme II CAPII) Regions
Source: CFU (2012a)

1.1 Problem Statement

CA by nature can mitigate land degradation; improve food security and well being of people. However, the problem of gender inequalities restricts access of women to credit, extension services, draft power, farming inputs, land and machinery than men. This creates a complex problem between the participation of women and men to ensure sustainable use of farming lands and achieving the benefits of CA. Improving women's access to farming services and support services would increase their participation in CA. It was therefore necessary to carry out research to find out how GM was being implemented in the CAPII in Mapanza area, Choma.

1.2 Aim

The aim of the study was to examine GM in the CAP II in Mapanza area, Choma.

1.3 Objectives

i. To examine the participation of women and men in the CAPII.

ii. Assess how the women and men farmers in Mapanza area relate to various CA practices

1.3.1 Research Questions

i. What is the representation of women and men in the implementing structure of the CAP II in the southern region?

ii. How is gender mainstreamed in the training of the farmers in CA in Mapanza area?

iii. What CA practices are being used by women and men in Mapanza area?

iv. What are the reasons associated with gender relations in CAP II?

1.4 Significance of Study

The different ways in which CA is conducted and managed, often have distinct implications for women and men smallholder farmers. Hence studies like this one that examine gender, are needed for the formulation of policy and development practices. It was thus important to conduct this study in order to provide feedback to the actors in CA on how and to what extent gender is being mainstreamed in CAP II. This will help improve the participation of both women and men in CA. The study will also contribute to the body of knowledge to enhance the understanding on how GM in CA is proceeding in the study area.

1.5 Outline of the dissertation

This study aims at assessing GM in the CAP (CAPII) implemented by the CFU based on the Southern region. Firstly, the study looks at the representation of men and women within the implementation structure of CAP II. Secondly, it examines how gender is mainstreamed in the extension materials used for the trainings for CA. Thirdly; it discusses the CA practices being used by women and men in the area. Lastly, the gender relations of women and men in CA are discussed.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

In this section, the literature that is reviewed is based on the African scale. Firstly, literature on CA is reviewed followed by a review of literature on GM. Lastly, the chapter reviews literature on the Havard Analytical Framework (HAF).

2.1 Conservation Agriculture

Soil nutrients have declined to unsustainable low levels in many farming systems in Southern Africa due to poor farming practices coupled with inadequate nutrient replenishment (Mafongoya *et al*., 2006). This is a major cause of low per capita food production and environmental degradation in Africa (Sanchez, 2002). It is against this context that CA is being promoted as a solution among smallholder farmers in most parts of Africa including Zambia (Giller *et al*., 2009).

2.1.1 Crop Rotation with Legumes

Crop rotation is one of the principles of CA, and aims at improving healthy soil. Crop rotation choices are related to gender (Agriculture Leaning and Impact Network (ALIne), 2011). Women, in particular, prefer growing edible legumes to meet the combined goal of food security and soil improvement whereas men are more involved in growing cash crops (FAO, 2011a). However, the extent of this difference depends on a farmer's circumstances and market opportunities (Sikod, 2007). This means that both women and men will only grow legumes in rotation that are attached to certain benefits. The practice of crop rotation can be conflictive to other principles of CA such as minimum soil disturbance. This is evident in the cultivation of groundnuts which involves soil disturbance in the process of harvesting which require digging.

Thierfelder *et al*., (2013) argued that harvesting of legumes like groundnuts makes it difficult to avoid soil disturbance as groundnuts have to be pulled out of the soil, which compromises the first principle of 'minimum soil disturbance' to a certain extent. This often compels farmers to re-do the planting basins. Other factors that influence the choice of crops include; the availability of legume seeds, the size of agricultural land available, payment for hired labour, the availability of family labour, destruction by livestock, crop

theft and the cultivation of crops primarily for sale (Yengoh, 2012). The foregoing review of literature shows that there are other factors which influence choice of crops. This suggests that it is not just gender alone which may influence the benefits of crop rotation.

Reducing the usage of fertilizer is one of the important goals of CA to prevent land degradation, thus sustaining the soil and the environment at large. Thompson (2009), points out that crop rotation is associated with the planting of leguminous crops, which increase the supply of nitrogen to the cropping system and improve the average level of nitrogen available in the soil. Growing legumes in rotation that fix nitrogen back into the soil is advantageous to resource-constrained farmers. This is because farmers will not only be able to maintain healthy soils but also avoid worrying about income to purchase inorganic fertilizers.

Additionally, Hobbs (2007) estimates 50-60 percent weed suppression due to crop rotation. Some crops that are grown prevent the growth of weeds, thus including such crops in rotation of crops would reduce / prevent the growth of weeds. Therefore rotation of crops may help to prevent the growth of weeds. Crop rotation is also an important factor in reducing the use of herbicides which may degrade the soils. Using crop rotation as a means to reduce weeds is advantageous to women and children who usually do the weeding by reducing weeding times. Kirkegaard *et al*., (2008) and Thierfelder *et al*., (2012) equally highlight the importance of crop rotation as an essentially biological pest control strategy. Rotating different crops breaks the development cycles of different pests thus preventing the use of pesticides. This in turn promotes healthy soil as well as reducing environmental pollution.

Despite offering some benefits, farmers face some challenges in adopting legumes in crop rotation because they prefer growing cereal crops for food security than leguminous crops (Snapp *et al*., 2010). Thus, rotating crops with legumes may become feasible when farmers become food secure within their households. Nkhala and Mango (2012), add that farmers are restricted from practicing crop rotation due to poor or non existence of markets for legumes on a large scale, plot size under cultivation and limited land, farmers' perception of risk to prevent food insecurity. The challenges faced by farmers indicate that improving farmers' conditions can enhance the adoption of crop rotation. The literature that has been

reviewed shows that the correct practice of crop rotation can reduce costs associated with herbicides, pesticides and weeding in general. While positive benefits of crop rotations are known and widely reported, achieving these benefits depend on farmers' conditions, thus crop rotation seems to be problematic.

2.1.2 Crop Residue Retention

It is recommended that in order to realise the benefits of crop residue retention, farmers should retain at least 30 % of residues within the field (Baudron, 2007). However, this can be possible if farmers do not depend on the usage of crop residues for other purposes as well as being able to produce more residues on the fields. Once maintained as recommended, crop residues offer various benefits. For instance, earlier observations by Hobbs (2007) show that crop residues prevent water runoff thus controlling soil erosion. This is supported by Friedrich *et al*., (2009) who states that soil cover ensures water conservation. Allowing mulch to accumulate on the soil minimises soil temperature and rate of evaporation from the soil is reduced.

In addition, mulch prevents loss of water by erosion. This is advantageous to farmers especially those living in drought prone areas since moisture would be retained for a longer time thereby improving the growth of crops. Women are usually faced with a challenge of increased labour, during the preparation of land when using hand hoe basin digging, maintaining crop residues would reduce their labour burden because of the biological activities in the soil which till the land. According to Hobbs *et al*., (2008) mulch provides food used by earthworms, arthropods and micro-organisms in the soil. As the organisms feed on the mulch in the soil, decomposition of matter, nutrient recycling, improvement of soil texture and soil fertility occur. These biological activities enhance biological tillage of the soil in turn, reducing soil disturbance, an important principle of CA. Furthermore, FAO (2010) observes that due to biological tillage of soils farmers can save up to 30-40 percent production costs.

Despite offering many benefits, maintenance of crop residues is characterized by many challenges. FAO (2011a), notes that maintaining a very high level of residues can lead to poor water infiltration especially in dry season or poor rainfall periods. This can force farmers to remove some residues in trying to improve water infiltration thus increasing labour. However, Paul *et al*., (2013), argue that specific amounts of residues required for

local conditions are often not clear. Despite such uncertainty farmers wishing to improve soil fertility maintain and allow crop residues to decompose on their fields. However, Rusinamhodzi *et al*., 2009; Nkhala and Mango, 2012 argue that some farmers stopped maintaining crop residues because some residues took long to decompose. This shows that farmers are likely to dis-adopt any technology whose benefits take long to improve soil fertility.

Dugue *et al*., (2004) and McDermott *et al*., (2010) state that crop residues especially stover, provide highly valued fodder for livestock in smallholder farming systems in Sub Saharan Africa. For instance, Umar (2012) estimated that an average of 7.6 heads of cattle required an average of 6.9 tons per hectare of crop residues to meet their fodder requirements. However, farmers were only able to produce 4.4 tons of residues per hectare. The inability to produce required amounts of residues may lead to failure to striking a balance between mulching and feed for livestock (Baudron *et al*., 2012; Valbuena *et al*., 2012). This suggests the need to produce more crop residues enough for soil cover and animal feed.

The literature above suggest that the competition between livestock and farming usage of crop residues has persisted despite the observation made by Silici *et al*., (2010) in Lesotho that members of the community needed to cooperate to come up with traditional institutions which would help resolve the problems of residue retention. However, formulation of traditional institutions alone, could not resolve the problem as long as farmers are not able to produce enough crop residues. This problem could be acerbated by poor access to farming inputs and other support services by some farmers including prevailing conditions for crop production.

Authors such as Bishop-Sambrook *et al*., (2004) and McCarthy *et al*., (2011) further reported limited availability of residues for in-situ nutrient amendments because they have been traditionally used for other purposes such as household fuel and construction. The above literature shows that the benefits of residues can only be achieved depending on quantities produced and type of residues used. The varying needs of residues lead to insufficient residue retention required to meeting CA objectives.

2.1.3 Minimum Tillage

Minimum tillage is one of the three major principles of CA.

It aims at reducing soil disturbance. Minimum tillage systems common in Zambia are the hand hoe basin digging and animal draft powered ripping

2.1.3.1 Hand Hoe Basin Digging

According to CFU (2009), farmers must dig basins spaced at 0.7 meters along the rows and 0.9 meters between rows. The recommended dimensions of a basin are 0.3 meters in length and a depth of 0.2 meters (see Figure 2.1). Basins should be deep enough to go beyond the soil hard pans and long enough to accommodate different crop seeds (CFU, 2012a). Farmers have to use a chaka hoe whose blade is large to enable them prepare large and deep basins (see figure 2.2). Arguably, hand hoe basins are an appropriate tillage system for farmers with limited land, due to the ability of the basins to accommodate more seeds of different crops. Furthermore, a study by Haggblade and Tembo (2003) conducted in Zambia showed that 15 percent of cotton farmers in moderate rainfall zones of Lusaka and Central provinces used basins, while none in the high rainfall Copperbelt used basins. This means that the type of ecological zone for a particular area influences the use of basins, in turn influencing the size and depth of basins.

There are differing reports in the literature about the effect of gender on basin digging as shall be discussed. For example, Maal (2011) observed that digging basins is more common among women than men. This as explained by Beuchelt and Badstue (2013), that men are associated with owning animal draft power than women. Therefore, poor access to draught power motivates women to dig basins in order for early preparation of land in readiness for planting at the onset of the rains.

Figure 2.1: Hand Hoe Basins
Source: CFU (2012b:1)

However, Baudron et *al*., (2007) states that preparing basins involves a lot of labour. This is associated with the difficulties that women and weaker farmers (farmers who may not be healthy and/or may not have strength to use the chaka hoe) experience when using the chaka hoe. Authors such as Mazvimavi, 2011; Marongwe *et al*., 2011 and Nyanga *et al*., 2011 show that features of the chaka hoe which include the long handle as well as the heavy blade (see figure 2.2) make it too heavy to be used, since the bigger the blade the wider and bigger the basin can be.

Figure 2.2: Chaka Hoe
Source: CFU (2012b:1)

Given the labour involved, farmers are encouraged to prepare planting basins over a longer period of time before the onset of rains. This according to Haggblade *et al*., (2011) is beneficial as it addresses the labour bottlenecks experienced during peak periods.

A study conducted in Zambia by FAO (2007) revealed that the basin making variant of CA almost doubled the weeding effort as compared to conventional agriculture. This is because farmers are required to weed early and continuously, with the objective of decreasing the seed weed bank over time. This is likely to double weeding labour for women because they are the ones that are mostly involved in weeding. Basin digging also increases labour requirements for land preparation during the first year (Maal, 2011). However, labour requirements are reduced after the first three years (Nyanga *et al*., 2012). This could be due to the requirement to maintain permanent basins, but the problem arises where livestock destroy the planting basins. This suggests that in reality, reduction of labour after the first

three years of digging basins is a win–win situation.

2.1.3.2 Animal Draught Powered Ripping (ADPR)

ADPR involves opening a narrow slot or furrow of about 5cm-10cm deep in the ground using an ox-drawn ripper at 90cm spacing (CFU, 2009). This type of tillage system is fast and easy to use. A farmer should have access to rippers and draught animals in order to make at least 0.15-0.20 meters deep ripped furrows at 0.9 meters spacing (see Figure2.3) while retaining the crop residues and vegetative matter between ripped lines (CFU, 2006). Ripping becomes possible in the dry season because it requires less energy than ploughing (Haggblade *et al*., 2011). It also restricts soil disturbance to precise areas where the crop is to be sown resulting in minimum soil disturbance of around 10% of the area (FAO, 2011b).

ADPR reduces labour demands for farmers because less energy is used to crack open (see figure 2.3) a rip line compared to ploughing (Umar *et al*., 2011). This gives both women and men time to do other off farm activities especially for women who may be over burdened with reproductive roles. In addition, ripping is advantageous to farmers who may not have access to social capital and have inadequate income. This is because reducing the hours spent on ripping implies reducing the cost for hiring draught animals and rippers when hours are used to determine the charge.

Figure2.3: Animal Draught Powered Ripping
Source: CFU (2012c: 2)

However, there are challenges associated with animal draught powered ripping of land. Nyanga *et al*., (2012), point out that when ripping the land, only 10% of the soil is tilled. This leads to an increase of weeds at the onset of rains thus increasing labour for weeding. Giller *et al*., (2009), assert that increased weed growth causes a gender shift of the labour burden to women since they are mostly involved in weeding. Ripping is not done on land exclusively free from livestock implying that there is a likelihood of destruction of rip lines. This suggests that if farmers rip their land in the dry season, they are more likely to rip a second time in order to re-open the rip lines (CFU, 2009). This can pose a challenge to farmers that have low access to and are not able to hire oxen (Maal, 2011). This is because owning draught power is more associated with men than women especially under a patriarchal system. Reviewed literature revealed that the choice of tillage systems used depends on farmer accessibility to farming implements, social-economic environment as well as the biophysical conditions (Beuchelt and Badstue, 2013; Haggblade and Tembo, 2003, Maal, 2011 and Umar *et al*., 2011).

2.2 Gender Mainstreaming and its development

GM was established as the key strategy to promote gender equality and the empowerment of women at the Fourth World Conference on Women, (FWCW) held in Beijing in 1995 (World Bank 2010). The Beijing Platform of Action which was adopted thereafter articulated the strategy which has since become widely accepted. Since 1995, GM as a strategy has been implemented in all sectors with varying degrees of success. Various tools have also been developed to support the strategy.

Nonetheless, challenges of implementing GM approaches have continued especially linked to monitoring and evaluating the impact of GM on the condition of women and men. Some of these challenges are related to the absence of appropriate and context-specific indicators that can capture the impact of interventions to promote gender equality and the empowerment of women (UN, 2006). This suggests that in the absence of indicators of how the GM process is proceeding, it becomes impossible to know whether or not GM is being implemented. Furthermore, the Beijing Platform for Action does not give any specific recommendations on how GM should be implemented. Therefore, different organizationshave defined GM in their own terms and have implemented it according to their own understanding of what is required in order to reduce gender gaps (Walby, 2005).

GM could be said to be the product of much earlier efforts to include gender in development through various approaches and models. These earlier models had focused on the reproductive roles of women. It was not until the 1970s that there was a paradigm shift in the promotion of productive roles from reproductive roles of women. This led to the set up of different gender development models. The Women in Development (WID); Women and Development (WAD); and Gender and Development (GAD) are the three models that became popular at different times. The aforementioned models are discussed in the section that follows.

2.2.1 Women in Development

The WID model gained prominence after the publication of Ester Boserup's work entitled "Women's role in economic development" (Boserup, 1970). Boserup's work challenged the modernization theory's assumption that women's poverty and oppression emanated from their lack of participation in economic development (Reeves and Baden, 2000). Boserup's argument was that women's poverty and oppression was caused by colonial and post colonial agricultural policies which facilitated men's monopoly over new technologies and cash crops (Boserup, 1970). This led to the loss of income and status by women hence forcing them to always depend on their husbands especially when agriculture was dominated by men. This suggests that having control over agricultural activities by men resulted into gender gaps which undermined the participation of women in agriculture (Razavi and Miller, 1995).

Reeves and Baden (2000) further argued that the decline in agricultural productivity and status of women led to a shift from a focus on their reproductive to productive roles. This was critical because it would reduce gender gaps in productive inputs and human capital, thus increasing the total agricultural output by an estimated 6 to 20 percent (World Bank, 2001). This led to implementing exclusively women projects and programmes in order to improve the productive contribution of women (Flood *et al*., 2007; Bradshew *et al*., 2013). Integrating women into existing development processes and structures would improve their social status and reduce gender gaps. However, empowering women with productive inputswhile ignoring the factors that cause unequal gender relations would only perpetuate gender gaps thus impacting women negatively.

Examination of women in development approaches showed that while the programmes and projects targeted women, the WID approaches were criticized for regarding women as passive recipients of development assistance rather than as active agents in transforming their own economic, social, political and cultural realities (United Nations Educational Scientific Cultural Organization (UNESCO), 2000). The strategies failed to link women's productive work with their reproductive work (GRZ, 2012). In other words, the WID model failed to tackle the real structural problem which is the basis of gender inequalities. Efforts to address this criticism led to the development of Women and Development approaches.

2.2.2 Women and Development

The WAD model became prominent after the 1995 United Nations Conference on WAD which considered women's reproductive and productive roles as critical to development (Blickhouser and Bargen, 2007). In order to help women, Munachonga (2006) points out that parallel women projects to men's such as income generating activities were encouraged in the WAD interventions. However, it was argued by Sakala (2006), that women would still face problems in agriculture due to division of agricultural roles by gender. For example, men would grow cash crops for the market while the women grew crops for household consumption. This meant that in times of shortage, the household could eat whatever the women provided while selling the men's crops. This would result in women's income and bargaining power being negatively impacted while men were positively impacted. Such negativity in household bargaining promotes gender gaps.

Promoters of WAD were criticized for their insufficient focus on reproductive roles; social relations and differences between and within classes; differing modes of production on the one hand and women's subordination and oppression on the other (Cornwall, 2003).These limitations resulted in a paradigm shift to GAD.

2.2.3 Gender and Development

The GAD model emerged in a more holistic approach than WID and WAD. Tasli (2007), points out that one important quality of this approach is that it shifts the focus from 'women' to 'gender'. It looks at women and men in their relative positions within the socio-economic, political, and cultural structures, thus gender should be integrated in all the interventions governing these structures (Gurung *et al*., 2008). The main instrument of the

GAD model is GM which demands giving a higher priority to women's concerns in the design and implementation of socio-economic and political interventions. It acknowledges Women's reproductive and productive tasks and challenges oppressive power structures (Flood *et al.*, 2007).

The GAD approach challenges cultural, social and economic privileges of the dominant group (in most cases men) to enable the disadvantaged benefit from the same resources (Goetz, 1997). However, research continues to show how social perceptions and norms can affect the means of obtaining the necessities of life, when intra household allocation of resources between men and women, depend on the perceptions about deservedness and prevailing norms of sharing within families (Richey, 2000). The real problem for women is the power imbalance between men and women. Therefore, implementing GM can reduce gender inequality enabling women and men to work together as agents of change and not passive recipients of development assistance (Sakala, 2006). Thus the GAD approach encourages gender analysis to be conducted in development interventions to unveil roles, needs and constraints that exist in a particular setting or society. The next section reviews measures for gender mainstreaming commonly used in development interventions.

2.3 Measures for Gender Mainstreaming Implementation

When implementing GM approaches, it can be helpful to have some kind of measuring stick or bench marks on different implementation parameters (Walby, 2005). Thus, a great deal of gender related measures for GM implementation have been created. Poulsen (2006), points out that implementation of GM approaches requires a clear policy of mainstreaming a gender perspective in all policies and programmes. A clear gender policy gives direction on what everyone within the organization is expected to do and achieve towards GM in their specific area of competence. In order to monitor and evaluate the implementation of GM, Gurung *et al*., (2008), urge for the development of appropriate performance indicators based on development. This is to ensure that their achievement can be assessed thus evaluating the impact of GM. The process of GM also requires political will, resources and consistent monitoring, for the translation of gender mainstreaming into reality (Benschop and Verloo, 2006).

Moser and Moser (2005), also observed that effective implementation of GM requires that everyone in the organisation makes it an everyday practice. In this regard, it is up to every

individual to consider GM as a personal task in his or her specific area of competence within the organization. This requires commitment by the management and supported by experts training in the implementation of GM (Hartmann-Tews*et al*., 2006). Nonetheless, implementation of GM can be problematic due to various challenges that are discussed in the following section.

2.4 Challenges of Gender Mainstreaming

Hannan (2004) and Walby (2005), assert that despite the inclusion of GM in numerous programmes there is little evidence to suggest that mainstreaming of gender concerns has been actually implemented in development projects. Some authors show that GM has not been effectively and systematically implemented (Australian Aid, (AusAID) 2002; Zuckerman, 2002).

Concerns have been expressed that GM is unreliable in delivering its intended outcomes due to numerous challenges (Bacchi and Eveline, 2003; Verloo, 2001 and Daly, 2005). Das Pradhan (2004), for example, argued that translation of GM into concrete outcomes is a great challenge in spite of the availability and abundance of GM information. This is because GM lacks standardization in goals, procedures and methods. Lack of standards on how to proceed in the mainstream process of gender, creates a situation where individuals and organisations may decide on how they feel gender should be implemented. This makes it difficult to monitor and evaluate the effectiveness of the mainstream process of gender. Lack of political will to foster implementation of gender to suit the mainstreaming objectives also impedes the implementation process of GM (Gurung and Laan 2003) and has since remained rhetorical.

Further, Moser and Moser (2005), point out that GM is underscored by lack of staff capacity to implement the mainstreaming process. It becomes a challenge for a person who does not understand what gender really is to mainstream it in an organisation. This can lead to lack of ownership and failure to make GM a personal responsibility.

Another challenge alluded to by Nilsson (2013:126) is that of treating women as being a "unified homogenous group of sisterhood" , implying that women have a common cause and no conflicting interests. This, ignores the varying interests amongst them consequently ignores the men in the process (Kabeer, 1999). This perpetuates gender gaps because both

gender groups need to be supportive if gender gaps are to be reduced and impact society at large.

2.5 Gender Mainstreaming in Conservation Agriculture

There are many gender gaps in gender relations regarding access to and control over agricultural resources and support services (Maal, 2011). This could be associated with poor implementation of GM in the designing, planning and implementation of CA. Also, in a case where the community is under a social patriarchal system, women would have control over productive resources only when their husbands or male relatives die. Such challenges increase the failure of women to adopt CA technology (Watson, 2005).

Considering the gender disparities that are inherent in CA, mainstreaming gender concerns as highlighted by (Fuchaka, 2002; Nkandu, 2012; Mukuka, 2013) could improve women's and men's participation in CA activities. However, Farnworth and Munachonga, 2010; Banda 2015, argue that implementing GM in CA, in Zambia, is still problematic because of inadequate internal gender policies and action plans coupled with inadequate policy implementation frameworks and monitoring and evaluation frameworks. This requires that individuals and organisations responsible for implementing GM become committed, and ensure that they make GM an everyday responsibility. Although many studies (Bishop Sambrook and Womani, 2008; Maal, 2011; Shula *et, al*., 2012; Nkandu, 2012; Banda, 2013) assessed the factors affecting women and men farmers, and the need to implement GM, there is still a gap on how gender is mainstreamed in CA.

2.6 Gender Mainstreaming in Extension Services

Improving farmers' crop productivity requires good agricultural information from extension services. Despite implementing different strategies to enhance easy access to agricultural extension services for both women and men, these efforts are hindered by the different roles and responsibilities, opportunities, constraints, priorities and needs that exist among women and men. These differences have an influence on the attendance of extension training by farmers and extension officers fail to address these gender differences. However, understanding gender roles can be a means of implementing GM in extension services (Dayanandan, 2011). Therefore, Dutta *et al*., (2010) suggest considering

the following aspects in ensuring equal participation of both women and men in extension trainings;

i. Recognising that women and men face different needs and priorities
ii. Both face constraints
iii. Both face different aspirations and contribute to development in different ways
iv. Specifying the proportion of women and men to be covered in trainings
v. Reorientation of the programme strategies and call for new activities with additional budgets and staff requirement.

The aforementioned aspects would enable the actors in agriculture to design a gender sensitive extension programme which can improve participation of both women and men. This entails that implementing GM in extension training should not go without measuring its progress. This according to Hanoi (2004) can be done using key indicators such as; women/men ratio of attendance at extension services, content of extension services compared to farming activities of women and men farmers, women and men ratio extension staff, women's access to factors of production compared to men's access, and women power in decision making in the household after participating in extension services. Therefore, identifying the barriers of women's and men's participation and indicators for GM implementation are important factors for monitoring and evaluating GM in extension services.

Monitoring and evaluation of the implementation of GM in extension services is important because it helps to identify how the process of GM is proceeding. It also helps to identify some obstacles to the implementation process. Failure to monitor and evaluate GM implementation could explain why there are variations in the participation of women and men in extension services with less participation from women. Many studies have shown the low women participation in extension services. Meinzen-Dick *et al*., (2010) state that these variations are centered on the prevailing norms that determine the interaction of both women and men.

For instance, Saito and Weidemann (1990) examined the extension service selection criteria for targeting farmers in Kenya, noting the addition of "unofficial" selection factors such as

minimum land size, literacy, and ability to purchase inputs, apparently designed to increase the likelihood of production increases. Structural biases were observed in the selection criteria, because the village chiefs and the field extension agents (generally men) made this selection hence few women were selected (see also the selection criteria for CFU in Zambia (CFU, 2012a:5)

Criteria for selecting farmer coordinators identified by the Conservation Farming Unit field staff in each region

i. Skillful conservation agriculture adopters who have at least four seasons of experience
ii. Adoption of conservation agriculture practices on at least 70% of their cropped land.
iii. Technically sound on all aspects of conservation agriculture and associated technologies.
iv. Quality management of farming operations with superior results and evident progress.
v. Application of conservation farming tillage practices whether hoe, animal draft power or combinations of both that reflect the majority tillage practice in their areas of operation.
vi. Sound communication, leadership and training skills.
vii. Literate, respected by local farming community and capable of absorbing knowledge.

The selection criteria simply indicate the factors to consider when selecting farmer coordinators without considering gender gaps in productive resources existing between women and men). A similar situation was evident in Ethiopia, where social norms restricted the extension staff members, who were predominantly men, from interacting with women farmers (Meinzen-Dick, Quisumbing, Behrman *et al*., 2010). It is obvious that ignoring gender gaps could result in the marginalization of women in extension services, thus mainstreaming gender in extension services is an important way of increasing women participation.

2.7 The Harvard Analytical Framework

The Harvard Analytical Framework (HAF) serves as a starting point in the design, implementation, or monitoring and evaluation process to reveal implications for women and men (United Nations Girls' Education Initiative (UNGEI), 2012). The framework seeks to reveal the gender differences in gender roles, responsibilities and inequalities between women and men (Meyers, 2012). Identifying the gender gaps between women and men can be used to determine the likely interventions to reduce gender gaps (Okali, 2006). The HAF uses the activity, resource and intervention profiles to identify the differences between women and men in development (see Figure 2.4).

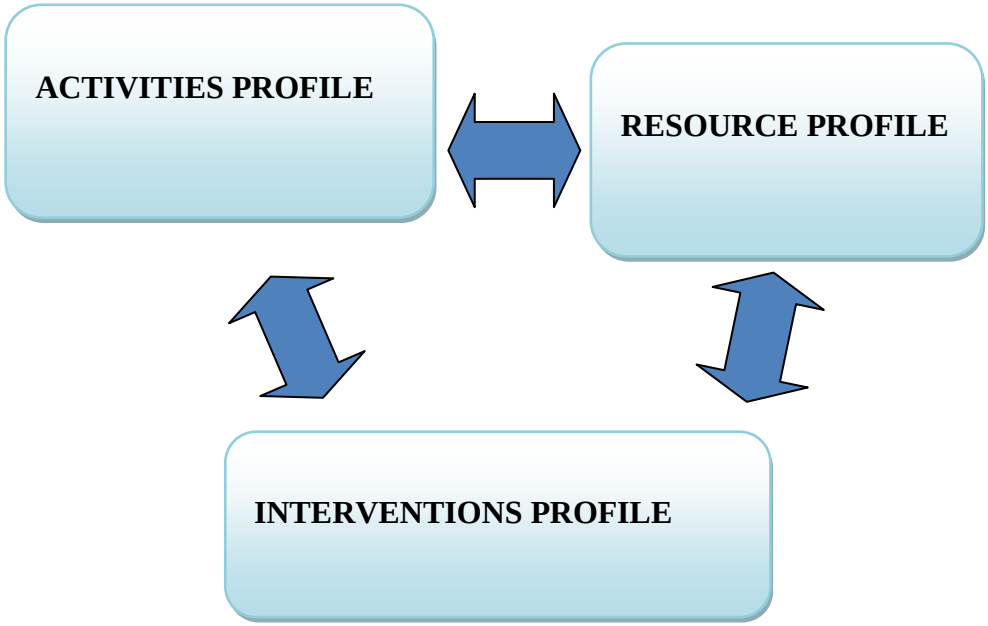

Figure 2.4: Adapted Havard Analytical Framework
Source: March *et al*., (1999)

The HAF was used to show how tasks were allocated between women and men, and how access to and control over resources between women and men influenced their participation in CA activities. Furthermore, the HAF was used to assess how the interventions for the CFU were mediating the activities and resource profiles of the programme as shown by the arrows on figure 2.4. The differences identified were used to argue the case for how the activities, resource and intervention profiles are intertwined in explaining the gender differences between women and men in the CAP II.

The activities profile considered the division of labour between women and men in CA practices. It helped to identify who performed a given activity between women and men in the CA practices. It also argued the case of who took part in extension training sessions between women and men. The framework also used the resource profile to identify who had access to and control over agricultural resources and support services. This included who had access to and control over inputs and implements, incomes, inputs and outcomes, education and market. Lastly, the intervention profile involved the interventions for the CFU in the CAP II which influenced both the activities and control over resource. Thus, the HAF helped to show how the activities in the CAP II are influenced by access to and control over resource by women and men, which in turn were influenced by the interventions of the implementing structure.

Suffice to say that despite the identified economic, social and environmental benefits that CA activities offer, gender gaps still exist in access to and control over farming resources and support services by women and men, including in the interventions that the CA promoters use to implement CA programmes. It is necessary to assess GM in the implementation of CA programmes, because ignoring the existing gender gaps that are inherently in CA, may be disruptive to achieving the full implementation of GM in CA, since it enhances participation of both women and men.

CHAPTER THREE

DESCRIPTION OF THE STUDY AREA

3.0 Introduction

This chapter describes physical and socio-economic characteristics of Choma. Firstly it describes physical characteristics such as topography, geology and soils, rainfall, temperature and vegetation. Secondly, the chapter describes the socio-cultural and economic aspects of the study area.

3.1 Location

Choma District lies within longitudes 260 30I and 270 30I and latitudes 160 and 170 45I (see Figure 3.1) on the plateau of southern Zambia and covers a total area of 7,296 km2 (Chikwanu, 2014).

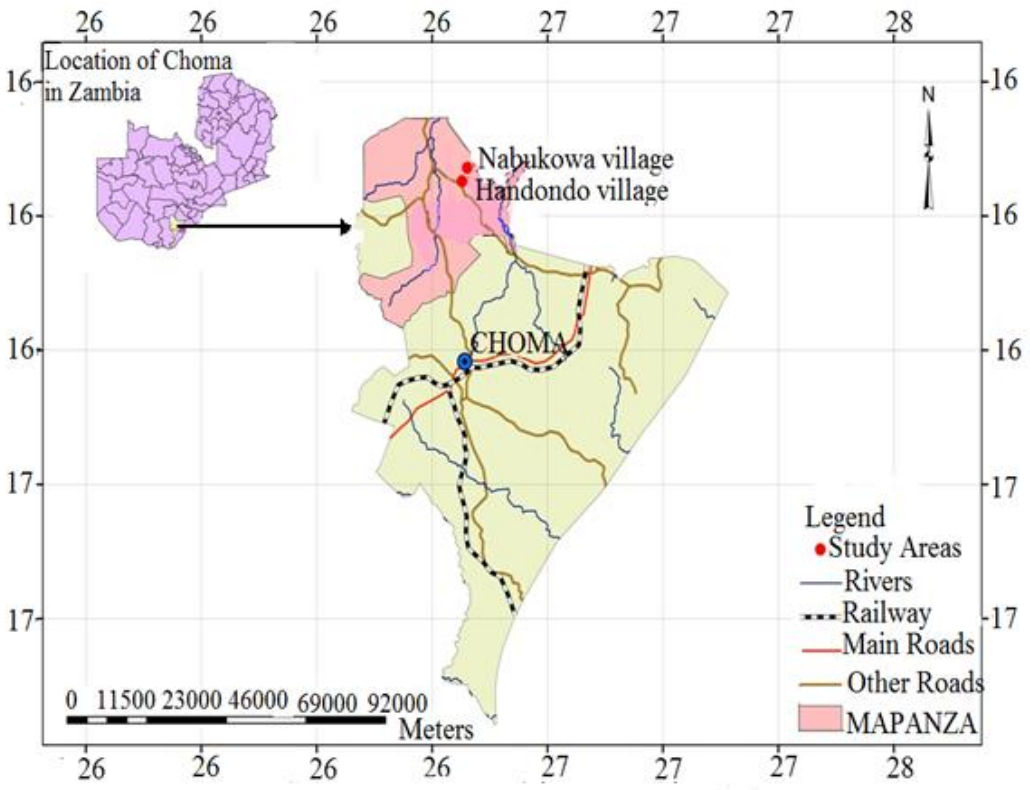

Figure 3.1: Location of Mapanza (study area) in Choma District
Source: GIS Department of Agriculture Technical Services

Choma shares boundaries with five other districts in the province namely: Namwala in the North, Monze on the Eastern side, Gwembe in the Southeast, Sinazongwe in the South and Kalomo in the West (Choma Municipal Council, (CMC), 2006).

3.2 Topography, Geology and Soils

The topography of Choma District is generally undulating plateau ranging from 1200m to 1350m. It consists of metamorphic rocks such as gneiss, granite-gneiss, amphibolites, quartzite, marble and calc-silicate rocks. The district also has small outcrops of Karoo Super group sediments i.e. Platonic rocks and hard deposit rock of the pre- Cambrian and the Palaeozoic and Mesozoic periods. The study area falls under the agriculture ecological region IIa (AER IIa). The AER IIa has a high agricultural potential because of Haplic Lixisols, Haplic Luvisols, Haplic Acrisols and other soil types which are more productive (Baumle*et al*., 2007). The soils support permanent cultivation of sorghum, maize, groundnuts, cow peas and a range of cash crops including tobacco, sunflower, irrigated wheat, soybean and horticultural crops (Kabwe 2012).

3.3 Rainfall

The area experiences rainfall lasting from November to April. Rainfall is highly variable and unreliable with uneven distribution and is generally insufficient within one rainy season and from year to year. These variations can have a major impact on crop production. Choma has an average rainfall of 800 mm of which 369 mm falls in January and February (Kachamba and Wamulume, 2015).

3.4 Temperature

Choma has a typical climate of southern Zambia with temperature ranging between 14°C and 30°C on average and sunshine ranging between 6 and 9 hours per day (Chikwanu, 2014). The highest temperatures occur between the beginning of October and the end of December. Once the rains start, temperatures tend to fall, partly because of the rain and partly due to the often heavy cloud cover. The lowest temperatures are usually recorded in June and July (Chibinga *et al*., 2012). The study area experiences three seasons that is;

Warm wet season (November – April), with average temperatures of 27-30°C

Cool dry season (May-July), with average temperatures of 16-27°C

Hot dry season (August-October), with average temperatures of 27-30°C.

The climate is strongly seasonal with cool dry season.

3.5 Vegetation

Large parts of Choma are dominated by semi-evergreen Miombo woodlands with trees 15-20m high with well-developed grassland (Smita *et al*., 2015). There is also spaced (Munga) woodland which is cleared for agriculture. Most Miombo according to Baumle *et al*., (2007) and Chikwanu, (2014) is secondary re-growth due to bush fires and seasonal cultivation.

3.6 Socio -Cultural and Economic Aspects

The study area lies in the Choma plateau, and is dominated by Tonga speaking people. They live in scattered hamlets often separated by several hundred of meters and are administratively under the authority of a village head called head-man or head woman, who represents the traditional chief. The household size varies between 4 and 20 family members (Baudron *et al*., 2007).The Choma plateau is basically a farming area comprising mainly smallholder farms and some commercial farms. Tongas are mainly small-scale land users, crop growers and livestock keepers. Their livelihoods revolve around livestock and crop production, commonly complemented by the use of natural resources. The most common livestock reared are cattle, goats and pigs. Poultry is also common.

Subsistence agriculture is the main source of livelihood and mixed farming is a common practice among large scale and small-scale land users, mostly integrating crops and livestock. Crops that are grown include maize, groundnut (*Arachi shypogaea*), cowpea (*Vigna unguiculata*), sweet potato (*Ipomoea batatas*), some cassava (*Maniho tesculenta*), sunflower (*Itehanthus annus*), soybean (*Glycine max*), cotton (*Gossypium hirsutum*), tobacco (*Nicotiana tabacum*) and horticultural crops. Recent farm enterprises include fish farming, bee-keeping and mushroom growing.

Mapanza was chosen because it is an important area for agricultural production in the province. Furthermore, the study area is in close proximity to the regional headquarters for the CFU. Thus, its CA promotion efforts have been going on for much longer than in other areas; it is more likely to see well developed structures of CA in the 'hub' of CA. Additionally, the researcher was quite familiar with the study area.

CHAPTER FOUR

RESEARCH METHODS

4.0 Introduction

This chapter presents the sampling methods, methods of data collection, as well as how the data was analysed and presented.

4.1 Sampling Frame and Sample Size

The study was conducted in the two villages namely, Nabukowa and Handondo of Mapanza area where CAP II was being implemented. The study area had a total of 65 households practicing CA under CAP II. The selection of respondents for this study was based on the criteria of choosing households with couples (husband and wife) where each spouse was in control of some fields. This was important so as to assess the gender aspects within the same household in relation to the mainstreaming of gender in the programme. Out of these 65 households, 45 were married and 20 were single. Of the 45 married households, 15 households fulfilled the selection criteria for this study. Thus a total of 30 respondents, 15 men and 15 women were purposively selected. Purposive sampling was also used to select key informants that were actively involved and working in close liaison with one another in CAP II, and focus group discussants to avoid selecting members from the same households so as to get diverse views from different households.

4.2 Data Collection Methods

Fieldwork for the study took place primarily during three visits to the study area: One week in March 2014 to carry out preliminary research and pre-testing of the questionnaire. Four weeks in April and July of 2014 was for administering the questionnaire, conducting focus group discussions (FGDs) and interviewing key informants, and one week in August for validation of results.

The researcher collected data from both primary and secondary sources. This information was collected using a mixed method approach which involves mixing or combining quantitative and qualitative into a single study (Johnson and Onwuegbuzie, 2004). This approach ensured triangulation which brought together different sources of information to conform to one interpretation. The use of a mixed approach method in this research helped to interpret information from different methods to enhance, expand, illustrate, or clarify

findings. Primary data was collected using a questionnaire, key informant interviews and FGDs. Secondary data was collected from desk analysis of published and unpublished reports from CFU, Ministry of Agriculture and Livestock, Ministry of Gender, and published scientific journals.

4.2.1 Questionnaire

Primary data was collected using a questionnaire (Appendix IV) with both open and closed ended questions. The questionnaire was administered by the researcher with the help of two research assistants. Questions were asked in Tonga, the local language spoken in the area. The spouses were interviewed separately to establish the intra-household gender relations in CA practices. Spouses were also asked separately to reduce the dominance of one spouse in the response. A questionnaire was used for household to ensure a broad based objective data collection and to get information on local context of the interaction between women and men in CA activities. A total number of 30 questionnaires were used in this research, 15 were for women and 15 were for men. The questions were read to the respondents by the researcher and research assistants. The responses were recorded in the questionnaire. All the administered questionnaires were successfully completed.

4.2.2: Focus Group Discussions (FGDs)

FGDs were used to collect data from multiple individuals simultaneously through recording. FGDs are less threatening to many research participants, and this environment is helpful for participants to discuss perceptions, ideas, opinions, and thoughts (Krueger and Casey, 2000). Three FGDs were conducted each comprising six members. One FGD consisted of women only; the second one consisted of men only while the third group comprised three women and three men. The FGD for women only was conducted on the 18th April, 2014 while the FGD for men only was conducted on 21st April 2014. Lastly, the mixed FGD was conducted on 22nd April 2014. Both the women and men FGDs were conducted from the woman coordinator's home in Handondo village where farmer group meetings were usually conducted from. The mixed FGD was held in Nabukowa village at one of the farmers' home because there was a good shelter and farm land with well established CA activities. Some focus group discussants from the first and second groups also participated in the third focus group.

The focus group discussants were purposefully selected with participants with the age ranging between 20-65 years. FGD comprising either men or women were separately chosen to allow for more free flowing conversation among participants within the groups. It also facilitated analyses that examined differences in perspectives between women and men. A mixed group for women and men helped the researcher to observe the group dynamics between the two genders. This helped to collect detailed consensus based information on the gender relations of household members in CA and constraints of mainstreaming gender in CA. The FGDs were recorded with permission from the discussants using a digital recorder.

4.2.3 Key Informant Interviews

Six key informants were identified and these included a field officer (personnel who has the knowledge, expertise and experience in agriculture and works as liaison officer providing agricultural training to farmers), two farmer coordinators (a farmer who reports to the field officer responsible for coordinating, consolidating and offering extension and training services to farmers), two farmers and the CA project regional manager (over seer of the CAP II in the region). The key informants were interviewed using an interview guide with open ended questions which provided opportunities for probing and more in-depth discussion (Appendix II). Key informant interviews provided additional information based on the experiences of the interviewees and supplemented the FGDs and questionnaire

4.2.4 Desk Analysis

Desk analysis included the review of literature related to GM and CA. It was an on-going process throughout the entire research period. Desk analysis helped to gather information on GM in the extension training materials. This was very useful in addressing the research that was looking at how gender was mainstreamed in extension training materials, the implementation and tools used by farmers. It also provided information on the profiles of activities and resources in the mainstreaming of gender in CA.

4.3 Data Analysis

The data collected was analysed using both quantitative and qualitative methods.

Quantitative data was analysed using descriptive statistics such as counts and percentages in Microsoft excel. Qualitative data was analysed using content analysis which was guided by the HAF (Spencer and Ritchie, 1994; Okali, 2006). Data was reduced to manageable

forms by transcribing recordings from focus group discussions and interviews. The transcribed data was then analyzed and responses grouped into themes. The frequencies of similar responses under each theme were then recorded to provide an impression of how frequently a view on a particular issue was expressed.

CHAPTER FIVE

RESULTS AND DISCUSSION

5.0 Introduction

This Chapter presents the results of the study and discusses their implications. It starts with a presentation on the demographic characteristics of respondents. This is followed by the education levels of the respondents. The representation of gender in the CFU's administrative structure within the southern region is the presented. The chapter then presents how gender is mainstreamed in the training for farmers. This will be followed by the CA practices being used by women and men in the study area. Lastly, the chapter presents reasons associated with gender relations in CAP II. I discuss the results under the themes which include; activities, resource and intervention profiles comprised in the HAF.

5.1 The Demographic Characteristics of Respondents

Most of the respondents were aged 46 years and above (see Figure 5.1). The household sizes ranged from three to nine members with an average of five members. Family size has an impact on GM. Where the majority of the family members were less productive, women were forced to spend a lot of time caring and provide food for the family, instead of engaging in CA activities. Again where the majority of the members of the family were of the productive age, they provided required labour needed to perform agricultural activities, giving women more time to participate fully in CA.

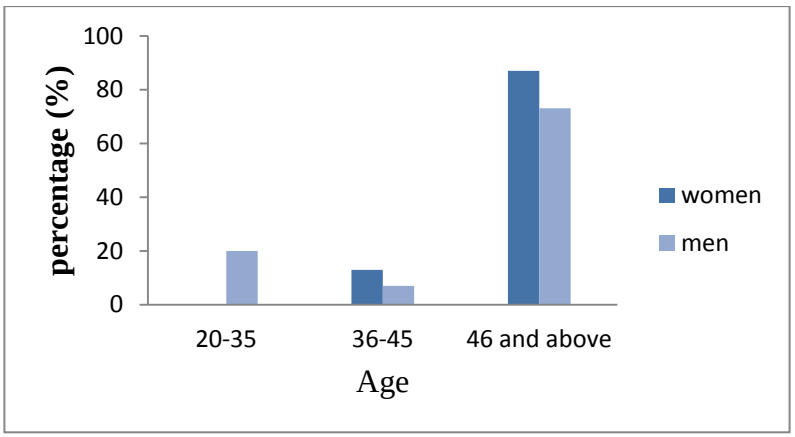

Figure5.1: Ages of Respondents
Source: Field data, 2014

Results presented in Figure 5.1 show that the majority of women (87 percent) and men (73 Percent) respondents were in their middle age and they valued CA as a sustainable technology that improves soil fertility. They also reported social capital to be a motivating factor for adopting CA. There were no young women practicing CA because they were so much involved in the cultivation of groundnuts for consumption and sale on a small scale, in order to meet the needs for their families. In addition, the study area had very few men youths practicing CA because most of them were involved in off farm activities for their livelihoods. Furthermore, youths argued that CA was labour intensive and they lacked farming assets.

These findings imply that age and farming assets influenced the adoption of CA. This in turn has an influence on the implementation of gender mainstreaming, since the youths who are most productive are shunning the practice of CA. Therefore, promoting GM among youths is questionable. Both women and men youths were more concerned about improving their livelihoods whilst the middle aged women and men were more concerned about improving soil fertility. Identifying the obstacles that hinder the participation of women and men youths will help increase the number of women and men practicing CA.

5.2 Levels of education of the respondents

Most of the respondents had some basic level of education (see Figure 5.2), showing education levels of the respondents.

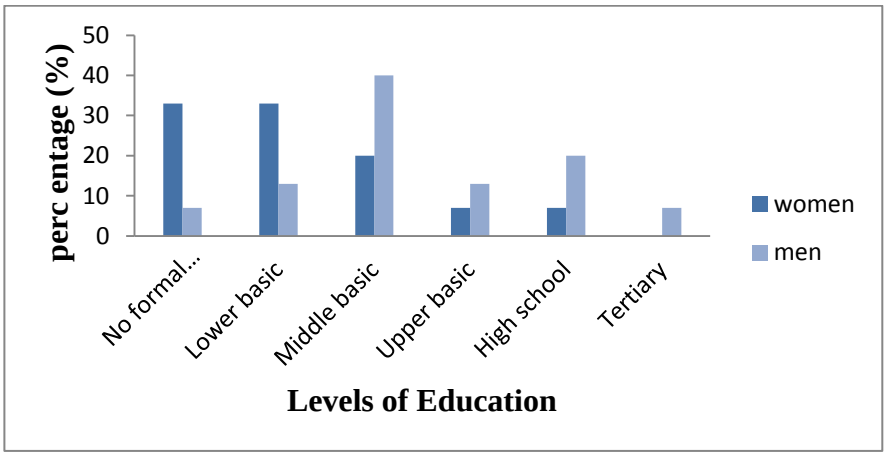

Figure 5.2: Educational Levels of the Respondents
Source: Field data, 2014

Education is an opportunity to adopt new technologies. So it is necessary to identify the extent of education gaps between women and men so as to understand the influence of education level in GM. The difference in education level brings about differences in implementation and outcome of GM. The results show that more women (33 percent) had no formal education as compared to the men with only 6.7 percent being illiterate. This implies that there is a high level of illiteracy among women in the study area. Similar observations were made in Ethiopia (Ogato *et al*., 2009) and Uganda (Diiro *et al*., 2015), implying that women could have difficulties in understanding training materials, thus hindering them from participating in extension trainings, and fail to take up CA practices.

Furthermore, results indicate the low level of education among women than men implying that most women may not have the confidence to participate in CA trainings due to failure to understand training materials. As such the implementation of the knowledge on CA may be hindered for most women. My finding is in contradiction with the observation made by Lu (2010) who found that women in Philippine were equally and actively engaged in agricultural activities. This could be associated with their high education level implying that improving the education level among farmers could enhance their confidence in thus improving their participation in agricultural activities,

5.3 Extent of Gender Mainstreaming

The extent of GM was assessed using the representation of women in CFU's implementation structure, and how gender is mainstreamed in the training of farmers.

5.3.1 Representation of women and men in CFU's implementation structure.

The study examined the gender representation in the implementation structure of CFU. The results showed that the extension structure of CFU within the southern region consist of the regional manager and assistant manager who are responsible for the supervision of the field supervisors. Field supervisor supervise the field officers, who in turn supervise the farmer coordinators. In terms of representation of women and men in the structure for implementing the CAPII, there are gender gaps (see Figure 5.3). The implementing structure of CFU in the Southern region shows that out of the total 407 members, there are 9 percent and 91 percent women and men, respectively.

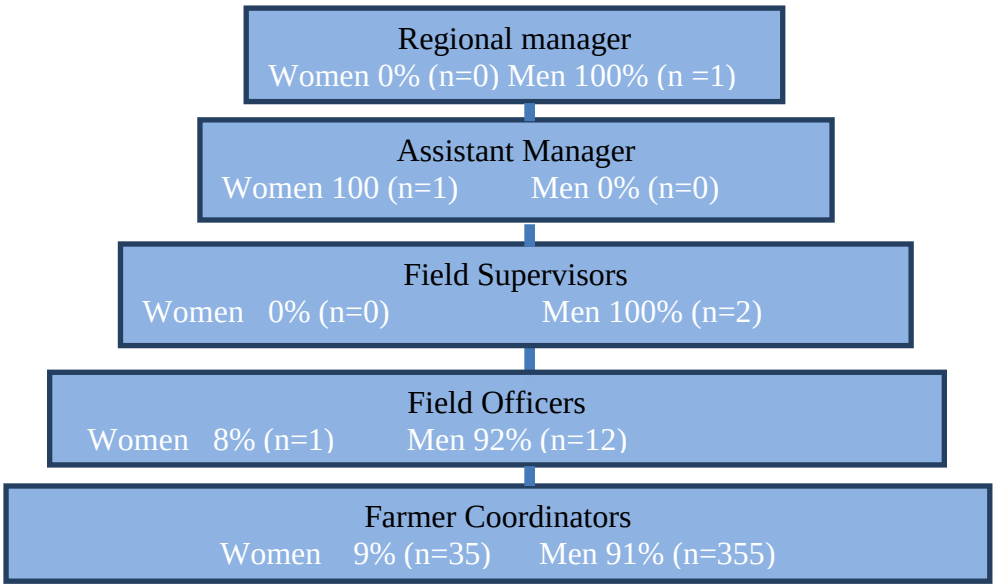

Figure 5.3: Gender gaps in CFU's Organisational Structure
Source: Field data, 2014

The gender gaps in the implementing structure show a dominance of men at almost all levels of the implementing structure except at managerial level within the region. These results reinforce earlier findings that women in Zambia, Ethiopia and Kenya have been underrepresented at all levels of decision making (see Mwila 2013; Koroma, 2014; Hora, 2014). On probing for the expected women representation in CAP II, key informants gave various opinions. Half of the key informants (50 percent) reported that women representation was 45 percent whilst 33 percent of the key informants reported that women representation was 30 percent, and the rest (17 percent) of the key informants reported that they did not have any idea about women representation in the implementation structure. One male key informant reported that;

> *"I am not aware of the women representation, it is better for you to ask my superiors because I can end up telling lies."*(Interviewee 1, 2014).

When asked, a superior reported that the CFU was using the national gender policy which advocates a 30 percent women representation in leadership positions. Results for this study have shown that women are underrepresented in the implementing structure. The reason for this low women representation is lack of a gender policy. This finding is in agreement with the observation by other researchers elsewhere, Nigeria (Ngodoo and Idisi, 2014); Kenya (Ndwiga, 2014) that argued that lack of a gender policy responsive to women's needs and concerns lowered women representation. Thus, it can be concluded that the CFU is helping

to increase the number of male trainers who are the majority in the implementing structure, while low women representation of female trainers is perpetuated in the process.

Furthermore, the selection criteria for farmer coordinators also negatively influenced women representation in the implementing structure. Results from the questionnaire show that there is less access to land, seeds, herbicides, market, income, social capital, draught animals, and rippers by women than men (see figures 5.5, 5.7 and 5.9). This means that the majority of the constraints faced by women are gendered. However, both women and men had high access to extension trainings. But being able to access extension training alone does not mean being able to adopt CA practices. The existence of gender gaps in farming assets could be a hindrance to mainstreaming gender in CA. For instance, the CFU's selection criteria for farmer coordinators emphasise on farmers adopting and applying CA practices on their farmland. However, the selection criteria ignore the fact that adoption of CA does not occur without influence from other factors such as culture, access to and ownership of farming resources (Anaglo *et al*. 2014; Quisumbing and Pandolfelli, 2010; Nyanga, 2012).

Allowing women in leadership positions could create women's self confidence and improve their linkage with extension services, so that they could take advantage of priority in all rewarding areas as the result of their leadership position in the implementing structure. This is one way of implementing gender since through women coordinators, more women would benefit. But it is not obvious that increasing women leadership may result in more women participation in CA. This depends on the willingness of the extension agent to consider gender in the extension services. Thus, farmers affected by gender biases (women in most cases) may fail to adopt CA, hence may not qualify as farmer coordinators.

Additionally, the requirement for a literate farmer coordinator excludes farmers that are not literate. Findings of this study show a high illiteracy level and the majority having low educational levels among women (see Figure 5.2) implying that they are most likely to have limited access to agricultural information. This acts as a barrier to women opportunity to understand the CA technology thus failing to adopt this technology. It can therefore be concluded that most women farmers in the study area are more likely not to have the knowledge and skills that are necessary to improve training, leadership and communication

skills which are part of the selection criteria. This has contributed to the exclusion of women as farmer coordinators, hence the low women representation in the implementing structure of CAP II.

5.3.2 Measures for Implementation of Gender Mainstreaming

Measures for GM implementation were used to assess the extent of GM from planning to monitoring and evaluation phases of the project cycle of the CAPII. This was necessary in order to understand how the implementing structure considered gender not only among farmers but in the entire project. These measures were obtained from the CAPII project document (CFU, (2011) and field data (2014), and were assessed using a set of parameters which were rated by the researcher (see Table 5.1).

Table 5.1: Parameters for Assessing Gender Mainstreaming Implementation

Programme Phase	**Parameters**	**Assessment of performance**			**Performance of CFU regards the parameters**
		poor	Average	Good	
Planning phase	1.Objectives	✓			Objectives do not show any gender aspect
	2.Expected results		✓		Out of the twelve expected results, only two include gender although they are not explicit on how it will be achieved.
Implementation Phase	3.Use of a clear gender policy by all staff	✓			No gender policy
	4. Specialised training of field staff in gender	✓			No training is being offered to the staff in gender issues
	5. Active involvement of both women and men farmers.		✓		To some extent field staff is encouraged to involve both women and men in all the activities. There are no clear guidelines on how to mainstream gender.
	6. Presence of gender expert	✓			No gender expert within the institution.
	7. Representation of women in key positions	✓			Of the total 407 key positions of farmer coordinators, only 9% are
	8. Use of Gender mainstreaming tools	✓			The institution has not developed the tools necessary for implementation of gender mainstreaming and they are not using any tools in training.
Evaluation phase	9. Monitoring and evaluation of gender mainstreaming.		✓		Some reports by external monitors for evaluation show that there is an attempt to segregate data.

Source: Field data (2014) and CAP II project document (2011b)

The findings of this study show that GM is marginal from planning to monitoring and evaluation phases of the CAP II. Only 33 percent of the parameters showed some aspects of gender. This is associated with lack of intervention measures for implementing GM within the CAP II. The absence of the measures for implementing GM entails lack of guidelines, on how to proceed with the implementation of GM thus exacerbating the gap between women and men, in turn perpetuating low women representation. It therefore, be said that lack of a GM policy and measures for implementing GM, is an impediment in closing the gender gap in CA. The above findings are similar to the findings observed in Kenya by (Kivoi, 2014) that show similar challenges for implementing GM.

5.3.3 Gender Mainstreaming in Training Materials and Training Approach

GM in training of farmers was assessed by examining extension training materials, training approach (see table 5.2) and attendance of trainings by farmers. The variables that included language, visual presentation, type of seeds, use of herbicides, and timing for training and targeted gender were used to assess GM in training materials and approaches. These variables were selected because they affected both women and men and so it was important to assess how gender was considered in all the variables. This helped to understand and explain the extent of GM in the training materials.

Table 5.2: Gender Mainstreaming in Training Materials and Approach

Types of Training materials	**Parameters**	**Extent of gender**			**Comment**
Handbooks	Language	poor	Average	Good	English is used which is not easily understood and read by illiterate farmers
		✓			
Leaflets	Visual presentation	✓			Mostly, men are depicted in pictures to illustrate trainings
Seeds	Type			✓	Cash crops (cotton), non cash crops (maize for subsistence), non-legume (cassava) and legume seeds (soya beans) are used which are in the domain of both women and men
Herbicides	Use		✓		Training materials encourage use of herbicides by both women and men. However, they are available in the domain of men (mostly for cash crops- cotton and maize) grown by men.
Training approaches	Time		✓		Participation is voluntary and open, allowing farmers to choose the time to attend.
	Target		✓		Both women and men are encouraged to attend training.

Source: CFU (2006, 2009, 2012b and c)

The medium of instruction (English) used in developing training materials (CFU, 2006, 2009, 2012 a, and 2012b) makes it difficult for less educated and illiterate gender to access the knowledge in this format. Failure to understand the information in the training materials may hinder both women and men farmers from participating in extension trainings and CA practices. This is contrary to the observation made by Manfre *et al*., (2013) that woman and men farmers who had easy access to agricultural information improved their yields. However, where one gender may easily understand the medium of instruction would not share the information with the spouse, especially where one gender may feel threatened by the other in terms of improving their yields. Furthermore, extension training materials showed that visual presentations of demonstrations are rated poor because they make more use of the men than women to illustrate demonstrations. This suggests superiority of men to women, and that could have a negative impact on GM implementation.

The seeds are rated good because some seeds used for trainings are for crops that are grown by both women and men. For instance, cash crops (cotton), non cash crops (maize for subsistence), non-legume (cassava) and legume seeds (soya beans) are used which are in the domain of both women and men. The use of seeds that are in the domain of both genders brings about successful implementation of GM.

The extension training materials and approach have shown some differences in the extent of GM. To a large extent gender is mainstreamed in the type of seeds used for training. With this intervention of using gender neutral seeds, both genders are encouraged to learn more about how to grow the crops, hence enhancing the participation of women and men in CA. Training materials also encourage the use of herbicides by both women and men. However, herbicides are available in the domain of men (mostly for cash crops- cotton and maize) grown by men. This is an obstacle for the GM process thus excluding women in turn.

Furthermore, results have shown that GM as regards the training approach has benefited both women and men. Making the extension training approach open and flexible by CFU, gives women and men high access to extension training enabling them to acquire agricultural information necessary to implement CA practices. However, as regards the medium of instruction that is used in extension training materials, GM has not benefited most of the women compared to men. This is necessitated by lack of measures by CFU to

introduce the easily accessible medium of instruction thereby hindering their participation in CAP II extension trainings. Thus the medium of instruction used to produce extension information should be easily accessible by all farmers.

5.3.4 Attendance of Trainings

Results for this study have shown that women have different access to training from men. According to farmer coordinators, attendance of trainings by women and men varied. From the two farmer coordinators who were interviewed, female and male respectively, farmers attendance based on their attendance sheets for each training type are shown in Figure 5.4 indicating the attendance of extension training by gender of trainer.

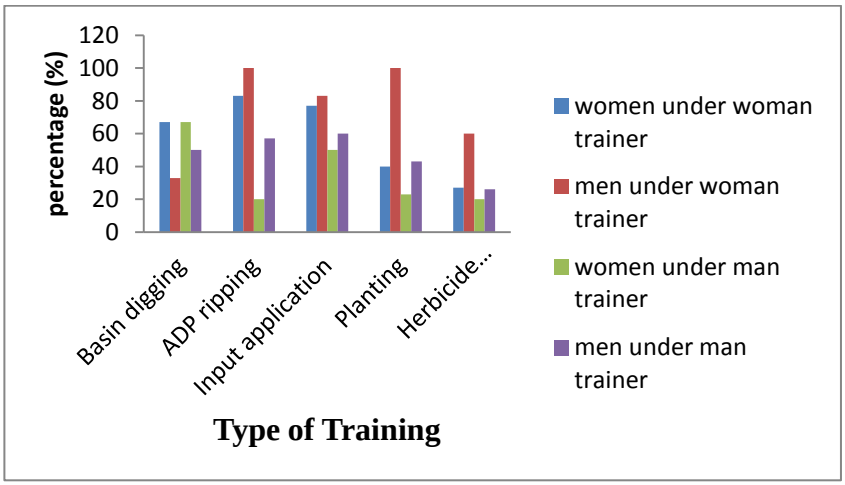

Figure 5.4: Attendance of Training Sessions by Gender of the Trainer
Source: Field data, 2014

The results from the key informants and questionnaire interviews showed that 60 percent of trainings conducted by the female coordinator were conducted in the morning compared to 60 percent of trainings conducted in the afternoon by the male coordinator. The different timings of trainings gave both women and men high access to extension trainings. However, the questionnaire interviews indicated that 83 percent of women compared to 62 percent of men attended trainings conducted by the woman regardless of timings of training. Reasons that were given for this included commitment of the woman trainer to training of farmers and making follow up activities, good rapport of the woman trainer with farmers, ability of the trainer to clearly articulate CA activities as the reasons for attending extension training conducted by a woman trainer. These findings were confirmed by the responses from all the FDGs and one woman said that;

> *"Our farmer coordinator exhibits good leadership skills because she always provides an opportunity for both women and men to express themselves and interact during trainings" (focus group discussant 2, 2014*).

Further, most of the farmers from all the FGDs showed that farmers did not attend trainings by the man coordinator. The following reasons were cited for this situation; the man trainer did not share the seeds and herbicides that were meant for the farmer group, failure to include all farmers in the fertilizer support group other than his relatives for subsidized fertilizers and inconsistencies in making follow ups on farmers' performance.

The implications of the findings are that when women are given an opportunity to be in leadership they could make good leaders. It could also mean that the woman coordinator considered gender in her trainings hence the willingness for both women and men to participate. This is important for the successful implementation of GM. Therefore inclusion of more women coordinators in the CFU implementing structure would improve women participation.

Results further showed that 20 percent of the women did not attend extension trainings compared to 13 percent of the men. Women reported that they did not attend training because their husbands attended trainings being the heads of the households. This suggests that men had control over extension trainings hindering participation of women in extension trainings. In line with a study in Malawi by the World Bank (2003) that showed that women worked long hours a day limiting their participation in extension trainings,17 percent of women in the study area reported spending much of their time performing household responsibilities such as child care, preparing children for school, fetching water and firewood. However, women managed to attend trainings conducted in the afternoon. Making the extension training gender responsive, by using an open and flexible training approach as well as giving both genders an opportunity to participate freely in trainings, especially by the woman trainer increased the participation of farmers. Sharing household responsibilities between and men may also improve the participation of women in trainings. Furthermore, some men reported in the FGD for men only and mixed FGD that they did not attend trainings because they were engaged in income generating activity of road construction. One man said that;

I have joined the road construction project in order to raise money for my children's school fees and for purchasing mineral fertilizer and household basic needs" (Discussant, 2014).

It was also cited by some women and men in the women and men FGD that limited capital to purchase and/or hire farming implements as well as purchasing inputs restricted their attendance of extension training. Further probing indicated that limited access to farming assets made it difficult to implement the lessons from trainings on CA. Farmers expressed concern that there was no need to attend trainings whose knowledge could not be implemented. Results could mean that poor access to farming inputs negatively influenced the attendance of extension training by some farmers. This implies that both women and men were negatively impacted by productive resources, although women could be impacted more as indicated by the results (see figures 5.6 and 5.8). The results also suggest that other factors in addition to gender influenced the participation of both women and men in extension trainings. This is consistent with the World Bank (2010) report which showed that other than gender issues, women and men and other disadvantaged farmers faced other challenges that hindered their participation in extension trainings.

These results indicate that there were high levels of GM regarding access to training sessions because farmers attended trainings conducted either in the morning or afternoon according to their suitability. However, some farmers reported several factors that hindered their access to training. These factors included household responsibilities by women, off farm income generating activities by men and lack of farming assets by both women and men.

5.4 Gender Relations in Conservation Agriculture Practices

This section presents and discusses various CA practices used by women and men among the selected farmers. Reasons associated with the differences in CA practices between women and men are also presented.

5.5 Conservation Agriculture Practices used by Women and Men.

The results showed that CA practices that were used by smallholder farmers were crop rotation with legumes, crop residue retention, animal draft powered ripping and basins (see Figure 5.5)**.**

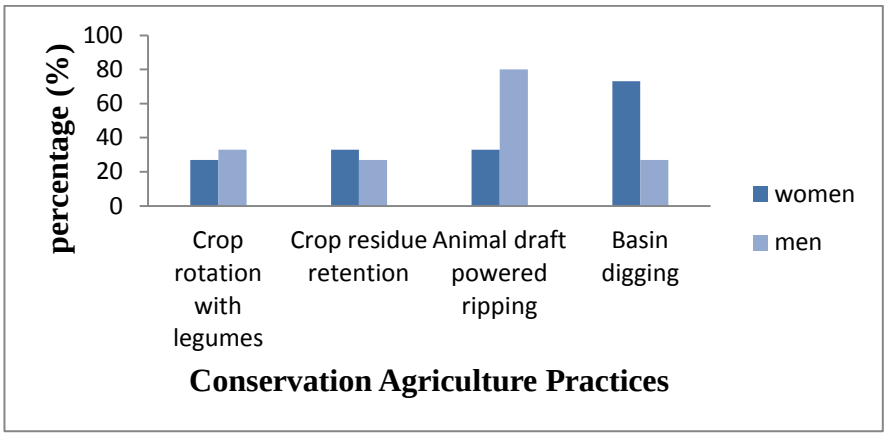

Figure 5.5: Conservation Agriculture Practices used by Women and Men
Source: Field data, 2014

These results show marginal differences in the percentages of women and men who practiced crop rotation and crop residue retention. There were substantial differences in the proportion between men and women as regards the use of animal draft powered ripping and digging of basins (see Figure 5.5). In the study area women and men attached very little importance to crop rotation and crop residue retention on the soil. This is because of valuing crop residues as fodder and maize as a staple food. As a result very few women and men practiced it. However, tillage system of the soil using ripping and basin digging was practiced by everyone, mainly because farmers used it as an indicator to the implementers of CAPII for practicing CA. The respective practices are presented and discussed in the subsequent sections.

5.6 Crop Rotation with Legumes

Results show that 33 percent of men practiced crop rotation compared to 27 percent of women. Factors influencing the practice of crop rotation that were reported included; limited land, access to seeds, access to herbicides, control of crops with good market price, access to markets and growing maize as a staple food (see Figure 5.6 below).

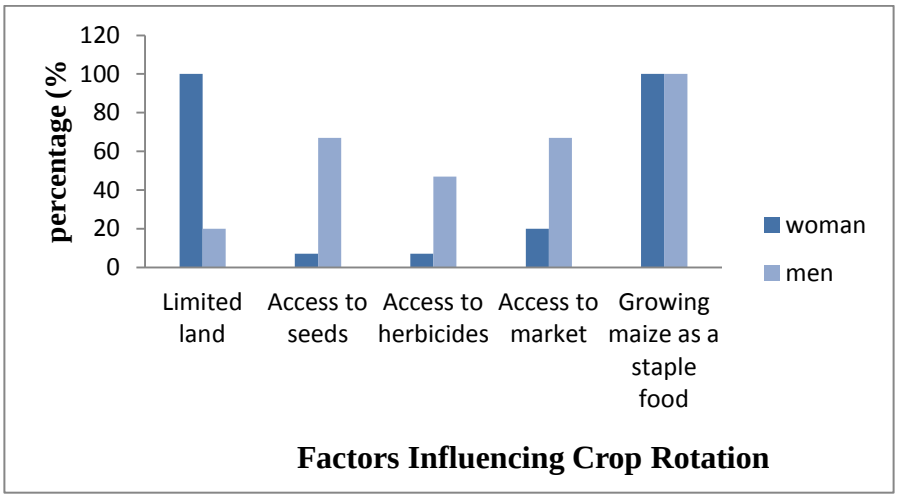

Figure5.6: Factors influencing crop rotation
Source: Field data, 2014

Results showed that all women and men farmers grew maize as a staple food on large plots of about two hectares. It was further pointed out by all focus group discussants that only small portions (not more than half a hectare) of legumes were cultivated. One male discussant from the mixed FGD argued that

> "*I cannot rotate maize with other crops because they do not produce mealie meal"* (Discussant, 2014).

The responses confirmed the significance of maize in household food security, thus the dominance of maize relative to other crops. This is consistent with Snapp *et al*., (2010), that observed that farmers preferred to grow maize in preference to legumes for food purposes. These results imply that most respondents were practicing mono cropping of maize which is conflictive to the principle of crop rotation with legumes. Results also suggest that both women and men in the study area had not yet realized the benefits of crop rotation because of concern towards food security needs.

From the questionnaire interview, 27 percent of all the women who practiced crop rotation reported growing legumes such as groundnuts and cowpeas. These crops were mainly grown for food security and they were exchanged either for soap, cooking oil or clothing with some being sold for cash. However, it was reported by some women that they had limited access to markets for their legumes. The legumes that were in the domain of all the men (33 percent) who practiced crop rotation were soya beans and groundnuts. It was generally reported in all the FGD that the motivation for men to grow these legumes was

more towards selling than consumption.

It was further noted that more than half of the men had increased their area under legumes because of the good price that was associated with soya beans and a reliable market for groundnuts at a nearby boarding school. Furthermore, access to inputs such as seed and herbicides through the project, was cited in all FGDs as one of the reasons for the increased involvement of men in the growing of soya beans. These results show that there are some differences in crop rotation between women and men as regards choices of crops. In line with FAO (2011b), this study has shown that the motivation for practicing crop rotation with legumes is more on household consumption among women than financial gains. However, the findings of this study are contrary to the argument that legumes are in the domain of women (Nyanga *et al*., 2012). This study has shown that due to higher access to market opportunities and inputs, some legumes can be in the domain of men.

Furthermore, the findings of this study have shown that GM as regards access to inputs in relation to legumes has not benefited women as compared to the men. Lack f interventions by CAP II to empower women with inputs necessary for the cultivation of legumes, shows that women have been sidelined thus hindering their participation in the practice of crop rotation. This explains why men were involved in growing soya beans and groundnuts for sale.

5.7 Crop Residue Retention

Results showed that 33 percent of the women practiced crop residue retention compared to 27 percent of the men. The factors that influenced the practice of crop residue retention included; use of crop residues as livestock fodder, residues used as fuel energy, for fencing gardens, proximity of the fields to the homesteads, spending of time at home, small size of the fields, presence of children at home, presence of dogs at home, and residues offering no benefits (see Figure 5.7).

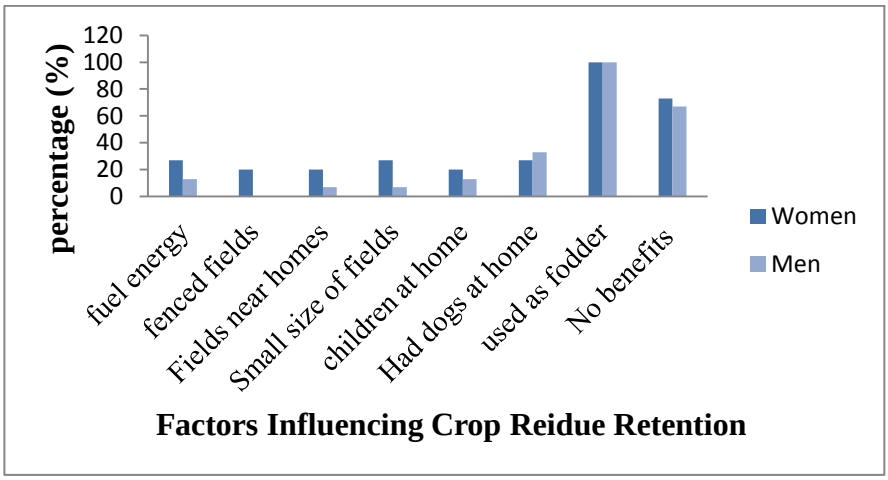

Figure 5.7: Factors Influencing Crop Residue Retention
Source: Field data, 2014

Results further showed that all the women and men who practiced crop residue retention and were interviewed reported valuing crop residues as fodder. Farmers also reported facing a challenge of retaining crop residues. Further results showed that 87 percent men and 80 percent of the women cited the problem of converting grazing land to agricultural lands as limiting the amount of crop residue retention. From women FGDs, farmers cited poor access to agricultural resources, such as mineral fertilizers, seeds, herbicides and rainfall as contributing to failure to increase crop productivity, in turn, failing to produce enough crop residues. This result is similar to Umar *et al*., (2012) who found that farmers in Sub Saharan Africa had difficulties to produce an estimated average of 6.9 tons of crop residues needed to feed 7.6 heads of cattle. These results suggest that both women and men in the study area are still facing a challenge of retaining crop residue because of valuing residues as livestock fodder.

Some women (20 percent) reported managing to retain crop residues because of having their fields closer to their homesteads. Responses from the women FGD showed that the presence of women, children and dogs at home all contributed to chasing away of livestock from the fields near homesteads. These factors were more associated with women because they mostly cultivated fields that are near their homesteads. However, all the women reported that retention of crop residues faced competition from the use of crop residues for fencing the gardens and fuel for cooking. This finding is in line with Bishop- Sambrook *et al*., (2004), that observed that the use of crop residues for other purposes hindered the retention of crop residues on the surface of the soil. On the other hand, men in the men only

and mixed FGDs reported that the fields under their control were larger than the women's and far from the homesteads. As a result, men had difficulty in managing crop residues because livestock grazed the crop residues as well as being burnt by bush fires.

The above results show that there are some differences in the retention of crop residues between women and men. This is mainly because of the location of women's and men's fields and size of the fields. Furthermore, the findings of this study have shown that there are no interventions for implementing GM in CAP II as regards crop residue retention, to ensure that crop residues are retained by both women and men regardless of who owns and uses the field. This has contributed to the differences in the management of crop residue between women and men.

5.8 Tillage Methods

The CAP II train farmers to use minimum tillage practices (hand hoe basins, animal draft ripping). Results from questionnaires showed that 73 percent of women used basins compared to 27 percent of the men. The majority (80 percent) of the men used draft animal powered ripping as compared to 33 percent of women. The choice of a tillage system was influenced by the accessibility of several factors below (see Figure 5.8).

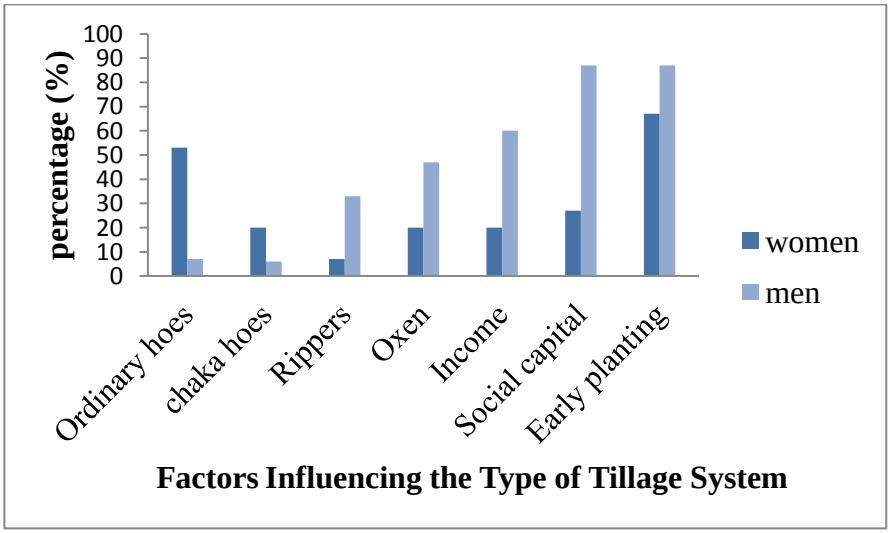

Figure 5.8: Factors Influencing the Type of Tillage Method
Source: Field data, 2014

Responses from all the FGDs and questionnaire interview showed that access to and ownership of draught animals, rippers and social capital by farmers positively influenced the use of ADP ripping by men. However, farmers reported low access to oxen, rippers and

income to hire draught animals and rippers positively influenced the use of hand hoe basins by most of the women. In addition, the nature and availability of hand hoe tools also had an influence on the practice of basin digging. The following sub sections present and discuss these factors in line with the practice of animal draft power ripping and digging of hand hoe basins.

5.8.1 Animal Draught Powered Ripping (ADPR)

Results of this study showed that 80 percent of the women did not own oxen. Women reported using household implements only after the men's fields were cultivated. Consistent with a study by Maal (2011), women's low access to draught animals and rippers posed a challenge when preparing their farmlands. Responses from all FGDs indicated that fewer women were sharing draught animals and rippers with their husbands. Further, results from the questionnaire showed that 20 percent of women were allowed by their husbands to borrow draught animals and rippers from non household members. However, 40 percent of women did not have access to draught animals and rippers either within the household or through borrowing. Findings from the questionnaire further showed that 47 percent of the men did not own draught animal and rippers but prepared their land on time compared to women. This was attributed to high access to social capital among the men than among women in respect to animal draft power.

These results have shown that higher access to social capital and draught animals explains why more men were involved in the CA practice of ADPR than women. Empowering women through women social groups would increase their participation in ADPR. As regards GM in practice, in respect to ADPR, GM was implemented to varying extents. Some women on one extreme had an opportunity to have complete access to draught animals and rippers while others on the other extreme did not. A high access to and control over animal draft power and ripping is largely in the domain of men hence their involvement in animal draft ripping. However, low access to farming assets is the main impediment for women to practice ADPR. This means that implementing GM can help resolve the obstacles faced by women as regards access to ADP ripping within and outside the households.

5.8.2 Hand Hoe Basin Digging

The hand hoe tillage method was found to be more common among women (73 percent)

than men (27 percent). Limited access to farming resources such as animal draught power and rippers was cited in the women FDG as one of the reasons forcing women to practice hand hoe basin digging. Further probing revealed that women had limited capital to hire draught power, and the need to mitigate food insecurity through early planting was the motivation for women to dig basins. Furthermore, respondents pointed out that the fields under the control of men were often prepared much earlier than those for women. In trying to also plant early, most women reported digging basins on their small plots near their homesteads. This view is in line with Ndiaye (2009) who found that women were unlikely to access the farming equipment until male owned plots had been tended.

The easy access to hand hoes as opposed to rippers by women also accounted for the high involvement of women in digging of basins. Majority of women (60 percent) reported using ordinary or traditional hoes to dig basins. This was attributed to the heavy weight of the chaka hoe and its limited availability. This is in agreement with (Marongwe *et al*., 2011; Maal, 2011 and Nyanga *et al*., 2011) that observed the difficulty in using the chaka hoe by women. The use of ordinary hoes is conflictive with the CFU which recommends use of a chaka hoe. However, some women in FGDs reported using the chaka hoe because the hoe can dig deep enough for retention of a lot of moisture in case of dry spells.

These results show that CAP II did not adequately take into account interventions for GM in the design of farming implements such as the *chaka hoe*. This has a negative impact on the use of the *chaka hoe* because the heavy weight of the *chaka hoe* could limit the area cultivated within a given period. Taking into account the existing traditional technologies that confer less drudgery to women would improve the easy use of chaka hoe by the women.

5.9 Overall Perspective of the Results

This study assessed GM in the CAP II. In order to show how women and men participate in the programme the study used an adapted HAF to analyse the results. This study found that there were differences between women and men with respect to their representation in the implementation structure and gender relation in CA practices. The various perspectives of the findings have been presented that can be grouped into three main overall perspectives that are interlinked. These are the activities, access to and control over resources and programme interventions (see Figure 5.9).

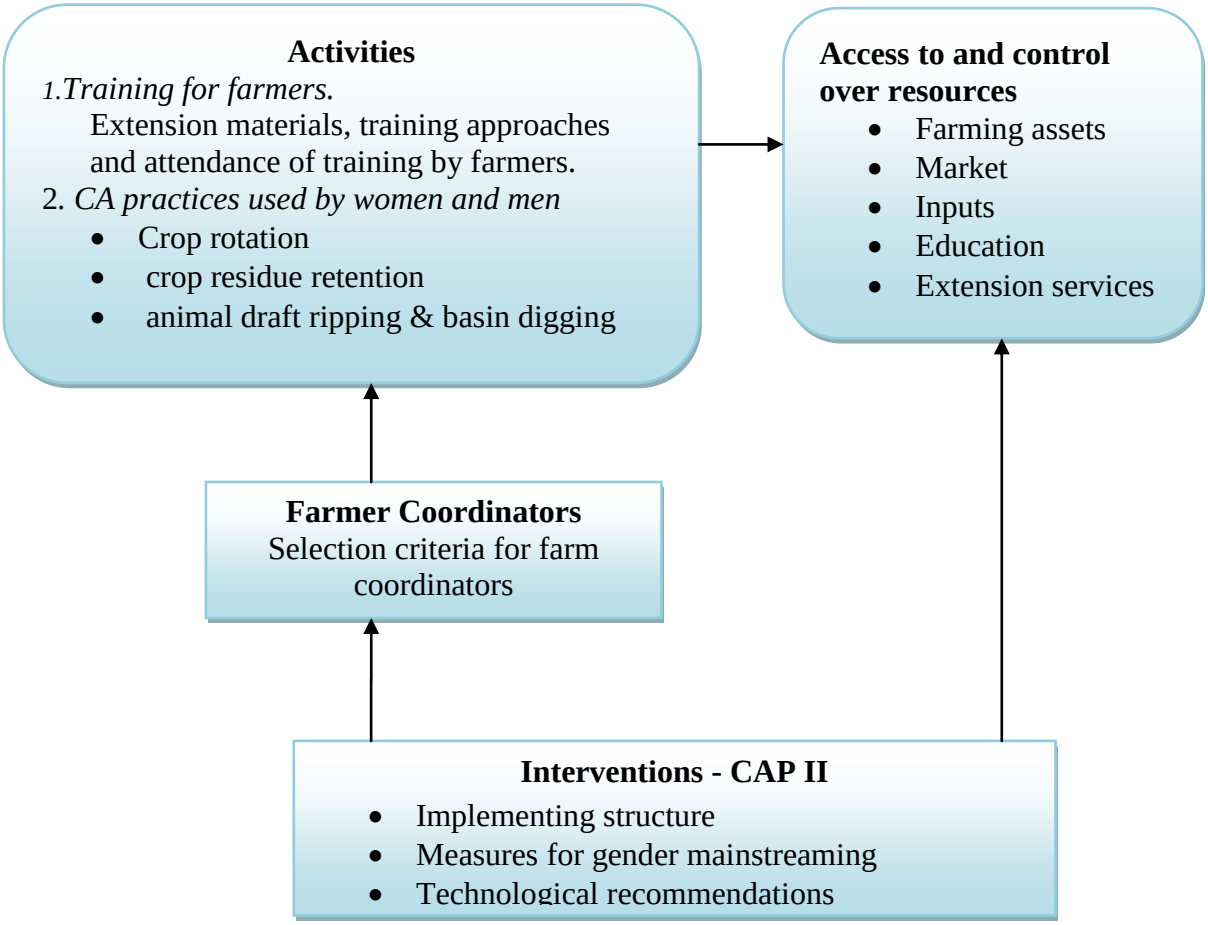

Figure 5.9: Overall Perspective of the Results
Source: Field data, 2014

The programme interventions largely influenced the activities undertaken by the participating farmers in the programme. The activities were mediated by farmer coordinators who were trainers to the farmers. Furthermore, within the households, access to and control over various resources tended to influence the implementation of gender mainstreaming in practice.

This study has shown that on the overall gender is poorly mainstreamed with reference to representation of women and men in the implementing structure of CAP II. There is a high dominance of men in the structure (91 percent) compared to nine percent women. This is due to a lack of a clear GM policy in the CFU (the implementing institution) to guide all activities including the selection criteria of farmer coordinators. Thus measures for GM were not adequate as reflected in the programme objectives, selection criteria for farmer coordinators, training for farmers and CA practices implemented by women and men.

This study has also shown that access to and control over resources such as education, markets, agricultural inputs, animal draft power, rippers, income and social capital mediated the translation of how the lessons learnt from the trainings into implementation and GM at the household level. Some programme interventions directly influenced access to and control over resources especially in the case of extension services and agricultural inputs.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.0 Conclusions

This study aimed at examining GM in CAP II. The objectives of the study were to examine the extent of participation of women and men CAP II and to assess how women and men in Mapanza area relate to various CA practices.

With reference to GM, this study has shown that there is a dominance of 91 percent of men compared to nine percent of women in the implementing structure. An analysis of the extension training materials showed that the medium of instruction (English) that is used is not easily accessible by the gender that is illiterate (mostly the women). However, there were high levels of GM in the access to training sessions because these were open, flexible in timing and voluntary to both women and men. However some farmers reported several factors hindering their access to the training sessions. These factors included household responsibilities for women, off farm income generating activities for men and limited access to farming inputs for both women and men. Good rapport between the farmer coordinator and the group farmers was cited as a major reason for motivating farmers to attend training sessions.

In terms of how women and men relate to various CA practices, results show that 27 percent of women compared to 33 percent of men practiced crop rotation. Women mainly included groundnuts and cowpeas in their crop rotation for household consumption purposes compared to men who included soya beans and groundnuts as legumes in crop rotation. Access to seeds, herbicides and ready market, motivated men to grow these legumes.

With reference to crop residue retention, 33 percent of women compared to 27 percent men retained crop residues on their fields. Proximity of fields to homesteads, presence of women, children and dogs at home positively influenced retention of crop residues in fields under women's control. Men had control over large fields that were far away from home making it difficult for them to retain crop residues.

The majority of the men (80 percent) used ADP ripping compared to 33 percent women and 73 percent of women compared to 27 percent men used basins. The high level of

involvement of men in ripping was because of their access to and control over animal draught and rippers. Access to and control over ADP ripping is largely in the domain of men. As regards GM in practice, in respect to ADP ripping, GM was implemented to varying extents. Some women (20 percent) on one extreme had an opportunity to have complete access to ADP ripping while 40 percent on the other extreme did not. The high involvement of women in hand hoe basin digging found in this study was due to limited access to draught animals and equipment. Women were also motivated to dig basins by the need to mitigate food insecurity through early planting. Furthermore, in relation to digging basins, this study has shown that the CAP II did not consider GM in the design of farming implements such as a chaka hoe that increases the drudgery to women.

6.1 Recommendations

Based on the findings, the following are recommended;

1. There is need for the CFU to have a clear GM policy and implementation strategies/measures that will ensure mainstreaming of gender from the programme planning point to farming households.

2. There is need to deliberately increase women representation in the structure for implementation of CA programmes. This would increase women's participation in CA and could increase their access to control over resources.

3. The CFU should consider producing training materials in the local languages which could be easily accessible by most farmers including women.

4. There is need to upscale factors such as flexibility, voluntary and inclusive approach of conducting training that have proven to be enhancing equal participation of women and men.

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APPENDICES

Appendix i: Interview Guide for Conservation Farming Unit Staff

1. Is there any gender mainstreaming goal and objective included in Conservation Agriculture Programme II?
2. How does the implementation plan for your project include activities that strengthen skills and provide women with equal access to services and training? Explain

3. Is there a person or department responsible for gender integration in different field offices?

4. Have project staff been trained in gender awareness and sensitization?

6. What is the extent of gender mainstreaming in the implementation structure of CAPII.

Appendix ii: Interview Guide for Farmer Coordinators

1. How is GM implemented in CA? E.g. selection criteria.

2. What differences are there in extension trainings for women and men?

3. What differences are there with regards to the type of CA practices being used by men and women?

4. What factors cause gender differences in the implementation of CA practices?

5. What would you consider to be the key challenge for men and women to ensure equal participation in conservation agriculture?

6. What do you suggest should be done to ensure that both men and women can participate in CA practices?

Appendix iii: Interview Guide for Focus Group Discussions

1. What CA practices are being used by women and men?

2. How are women and men involved in the CA practices?

3. In your view, do women and men participate equally in CA practices within households?

4. What challenges do you face in ensuring that you work together in CA?

5. Are the extension trainings under CAP II gender inclusive?

6. Explain the factors/reasons that influence the attendance in training and implementation of CA practices of women and men in CAPII.

Appendix iv: Questionnaire

INTRODUCTION

My name is……. I am conducting research on the impact of gender mainstreaming on conservation agriculture on local communities, I am asking questions to people who are married, practicing conservation agriculture under the Conservation Agriculture Programme II and each spouse has a field under her or his control, so that I get their views. The information provided will be for academic purposes only and will be kept confidential and anonymous. Is it ok for me to interview you?

Thank you.

1.0 Interviewer

Name of Interviewer_____ Date of Interview_____

Section A: Household Demographic Data

1.1 Village

Name…… ……Sub-Village Name……..

1.2 Respondent;

Sex- Female ( ) Male ( )

Age- 1.20-35 years ( ) 2.36-45 years ( ) 3. 46-65 years ( )

Size of household.....

Education level;

No formal education	Lower basic (grades 1-4)	Middle basic (grades (5-7)	Upper basic (grades 8-9)	High school (grades 10-12)	Tertiary (specify)
0	1	2	3	4	5

SECTION B: EXTENSION TRAININGS

1. Do you receive training in conservation agriculture?

1. Yes ( ) 2. No ( )

2. Who conducts training?

1. Famer coordinator ( ) 2. Field officer ( ) 3. Both ( )

3. Is the trainer a woman or man trainer?

1. Woman trainer ( ) 2. Man trainer ( )

4. Give a reason why you attend training conducted by the trainer you mentioned in question 3.

_____

5. Are there specific timings for trainings?

1. Yes ( ) 2. No ( )

6. Which training timing do you prefer? Explain

_____

7. What challenges do you face in terms of attending training? Explain

_____

SECTION C: ACCESS TO AND CONTROL OVER FARMING RESOURCES

8. Do you own any agricultural assets within the household?

1. Yes ( ) 2. No ( )

9. If our answer to question 4 is yes, what are the agricultural related assets that you own?

1. Animal draught ( ) 2. Oxen ( ) 3. Hoes ( ) 4.chaka hoes ( ) 5. Rippers

10. Do you have any challenges using any of these assets owned within the household?

1. Yes ( ) 2. No ( )

11. Explain your answer to question 6

_____

12. If your answer to question 4 is no, do you hire any assets that you do not own?

1. Yes ( ) 2. No ( )

13. Name the agricultural resources that you hire?

_____

14. Do you have any challenges in using any of these assets within the household?

1. Yes ( ) 2. No ( )

15. If the answer to question 6 is yes, what challenges do you face?

_____

16. Are you involved in any income generating activity?

1. Yes ( ) 2. No ( )

17. Name the income generating activity that you are involved in?

_____

18. If the answer to question 14 is yes, how do you spend the money obtained?

1. Purchase of fertilizer and seeds ( ) 2. Buying food ( ) 3. Paying school fees for the children ( ) 4. Buying household goods ( ) 5.Others specify_____

SECTION D: GENDER RELATIONS IN CONSERVATION AGRICULTURE PRACTICES

19. Are you involved in crop rotation with legumes?

1. Yes ( ) 2. No ( )

20. If your answer to question 39 is no, give reasons

_____

21. If your answer to question 39 is yes state the crops that you grow

1. Groundnuts ( ) 2. Cowpeas ( ) 3.Soya beans ( ) 4.Cotton ( ) 5. Maize ( )

22. Give reasons for the crop that you grow

1. For cash income ( ) 2. Consumption ( ) 3.Others specify_____

23. What factors influence the choice of your crop? Explain

_____

24. Do you face any challenges in crop rotation? Explain

1. Yes ( ) 2. No ( )

25. What challenges do you face? Explain

_____

26. Are you involved in crop residue retention?

1. Yes ( ) 2. No ( )

27. Explain the factors that influence the retention of crop residues

_____

28. Do you have challenges in retaining crop residue?

1. Yes ( ) 2. No ( )

39. What challenges do you face? Explain

_____

30. What tillage method do you use?

1. Animal draft powered ripping ( ) 2. Basin digging ( )

31. Give reasons for using the type of tillage method

_____

32. What factors influence the choice of tillage system you are using?

_____

33. What challenges do you face in using the tillage method mentioned in question 27.

_____

Thank you for your time.