RESEARCH PROJECT

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THE ROLE OF WOMEN IN NATURAL RESOURCE MANAGEMENT IN THE SUGARBELT: A CASE STUDY OF LAND IN MALAVA DISTRICT IN WESTERN KENYA ^

BY

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DECLARATION

This research work is my original work and has not been submitted for any diploma, degree or masters award in any other University.

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DEDICATION

This work is dedicated to my husband Soita Shitanda, without whose support I would not have undertaken this course. My children, Sidney Soita, Shirley Soita and Terence Soita, who gave me the time to concentrate on my work and to my parents Mr. and Mrs. Mwimali who have always encouraged me to move on.

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TABLE OF CONTENTS

DECLARATION ..... **ii**

DEDICATION ..... **iii**

ACKNOWLEDGEMENTS ..... **iv**

TABLE OF CONTENTS ..... **v**

LIST OF TABLES ..... **viii**

ABSTRACT ..... **ix**

CHAPTER ONE **1**

1.1. INTRODUCTION 1

1.2. Problem Statement 2

1.3. Study Objective 3

1.4 Research Questions 4

1.5. Justification of the Study 4

1.6. Area of Study 6

1.7. Scope and Limitation of the Study 7

1.8 Assumption^of the Study 8

1.9. Definition of Key Terms 8

1.9.1 Access and Control 8

1.9.2. Gender division of labour 9

1.9.3. Land Tenure 9

1.9.4. Natural resources 10

1.9.5. Natural resource management 11

CHAPTER TWO **12**

2.0. LITERATURE REVIEW 12

2.1. Introduction 12

2.2. Women in Natural Resource Management 13

2.2.1. Gender roles and land management 13

2.2.2. Access and control of resources 15

2.2.3. Strategies for land management 17

2.2.4. Land tenure and its role in ensuring sustainable use of land 20

2.2.5. Land management strategies 25

2.2.6. Conclusion 27

2.3. Theoretical Framework 28

CHAPTER THREE **32**

3.0. METHODOLOGY 32

3.1 Introduction 32

3.2 Research Site 32

3.3 Study Design 32

3.5 Sampling Strategy and Sample size 33

3.6. Operationalisation of Variables 33

3.7. Methods of data collection 34

3.8. Methods of data analysis 34

CHAPTER FOUR **34**

4.0. ANALYSIS OF DATA 35

4.1. Introduction 35

4.2. The Role of Women in Land Management 35

4.3. Gender Roles in Land Management 37

4.4. Land Control and Ownership 41

4.5. Effect of Land Tenure on Land Management 44

4.6. Strategies for Land Management 45

CHAPTER FIVE **47**

5.0. CONCLUSIONS AND RECOMMENDATIONS 47

5.1. Conclusions 47

5.2. Recommendations 48

DATA COLLECTION INSTRUMENT **51**

REFERENCES **54**

LIST OF TABLES

Table 1: Role of women in land management

Table 2: Time Spent on farm

Table 3: Ways of Spending Time on a Daily Basis

Table 4: Assistance in Utilisation of land

Table 5: Land control

Table 6: Land Ownership

Table 7: Decision on what is grown on land

Table 8: Lease of land

Table 9: Relation between title ownership and land management

Table 10: Strategies for land management

ABSTRACT

Women play the primary role of natural resource management as they are the major land users. But it has been found that land ownership, access and control of land resources hinder women from proper participation in its management. While women perform much of the productive work on the land, their contribution has largely remained unrecognised. Yet empowerment of women in the management of natural resources has been tightly linked to sustainable development.

This study sought to determine the role of women in land management in the sugar belt of Western Kenya. The findings show that women play an active role in land management through the number of hours that they are engaged in farm work. The study found that majority of women spent three or more hours per day in farming activities. The majority of women are engaged in farm work and in the sell of farm produce. These findings are in agreement with finding from literature, which have shown that most rural women are involved in farming activities and marketing of farm produce.

Gender roles were found to be traditionally defined, with majority of women being responsible for reproductive activities while majority of the men are involved in paid employment. The study also found that both men and women are actively involved in decision making as concerns what to grow on family land and how to spend household income unlike in most findings from literature which have shown that such decisions are usually made by men.

On land ownership, the study found that the majority of residents in the study area did not own titles for the land they farm. Despite this, it was

found that the majority of land users applied some form of proper land management techniques.

The study found that some of the farming techniques that women employ in land management include mixed cropping and crop rotation. The Study therefore underscores the need to promote and educate women on modern farming techniques since their involvement in farming activities is high.

The Study therefore concludes that sustainable use and management of natural resources can only be reached through overall capacity-building of women through education, access to credit facilities, improved marketing skills and the provision of user-friendly technologies. To achieve this, policy makers, planners and development workers must have a better understanding of the relative and often shifting roles of men and women in agriculture and natural resource management, also with respect to decision-making, use of traditional knowledge, division of labour and traditional practices of women and men.

CHAPTER ONE

1.1. INTRODUCTION

Natural resource management is crucial to the economic sustainability of any given community, what with the majority of the world population being dependent on land from where they derive livelihood mainly from agriculture. Women play the primary role of natural resource management as they are the majority of workers on the land. In most rural settings, they are responsible for growing and collecting food, medicines, fuel, housing materials, providing cash income for schooling, health care and other family needs.

Due to the nature of their responsibilities and direct dependence on land-based resources, it is important to recognise and promote the role that women have in natural resource management. On the one hand, they may be agents of environmental degradation by the nature of their activities and responsibilities, but they can also have an equally enormous impact on conservation due to their multiple roles. Empowering women to ensure a better use, management and control of resources is therefore vital for sustainable natural resource development.

In order to be effective, women must gain more control of resources and of development planning and their needs and role must also be integrated into decision-making in general. The Beijing Conference of 1995 recognized that unless the contribution of women to environment and natural resource management is recognized and supported, sustainable development would remain elusive.

This research sets out to analyse the role of women in the management of natural resources in the sugar-belt area of Western Kenya with specific

reference to Malava District, and highlighting the position of gender relations on the effective utilisation of the natural resources.

1.2. Problem Statement

Natural resource depletion and degradation issues affect economic and social livelihoods. Women worldwide are highly dependent on natural resources. Women in Malava district as in the rest of Kenya and in sub-Saharan Africa in general, are highly dependent on land but their contribution to its sustainable use has largely remained unrecognized.

Male labour migration has shifted responsibilities for natural resource management to women. Yet, an analysis of the role of women in land conservation reveals that women derive only limited benefits from such activities. They do not get access to the land they have helped to rehabilitate or to the trees they have planted and nurtured. According to IFAD, this has led to women being discouraged to engage in more conservation activities (IFAD 1992). The effect of this scenario has been widespread poverty caused by the degradation of soil, water resources and the scarcity of biomass resources to meet daily needs.

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Rapid population growth in Malava District has resulted in pressure on land, which has led to fragmentation and has made the size of land holdings uneconomical for cultivation. Degradation of soils and various other factors have also contributed to the decline in agricultural production, which is the main source of income for most rural households.

Due to the patriarchal system in the area of study, women are placed in subordinate position. Land ownership, access and control of land resources hinder women from proper participation in the agricultural sector. Further,

while they perform much of the productive work, their contribution has largely remained unrecognised. Hence, gender-based inequalities have greatly contributed towards the discrimination of women in economic production, and led to stagnation of the economic wellbeing of the community.

Further, in the study area, men are usually in control of economic resources, and, in majority of households women have to obtain permission from their spouses on use of family resources.

Decision-making is another important factor that affects women's contribution in land management. This is especially so considering that in the district, women are the major users of the land resource and participate directly in the generation of family income by engaging in the marketing of agricultural produce and spend most of their income on household expenditures.

Further, in terms of ownership, traditionally, land belongs to men and land tenure regimes are biased against women, yet women are more active in agricultural land use than men.

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1.3. Study Objective

The overall objective of the study was to investigate the role of women in natural resource management, and specifically on land use in Malava district. The study examined the effect of gender division of labour on land management, the impact of the land tenure system and the strategies that are used in sustainable management of land.

The specific objectives were to;

(1) Investigate the role of women in natural resource management.

(2) Investigate division of labour and how it relates to the role of women in land management.

(3) Examine the impact of land tenure systems on women's land management efforts, and

(4) Examine the strategies used by women in land management.

1.4 Research Questions

The research set out to answer the following questions:

1. What role do women play in natural resource management
2. How does gender division of labour relate to the role of women in land management
3. What effects do the land tenure systems have on women's efforts in land management, and

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4. What strategies do women use in land management

1.5. Justification of the Study

Throughout the world women are involved in the use and management of natural resources. Yet environmental and natural resources degradation constitutes a major challenge to the development process of many countries. Poverty leads to overuse and destruction of the natural resource where short-

term development goals and practices are pursued at the expense of long-term environmental sustainability. Since poverty often has a female face, women are more affected by natural resource degradation due to their dependence on it.

In Kenya, the rapidly growing population demands more and more from her natural resources, environment and the agricultural sector in particular. But without appropriate policy and public awareness, the strain on available resources is likely to degrade the environment further and thus threaten the long-term sustainability of the development process.

The degradation of the natural resources has impacted negatively on family labour, especially on women who have been forced to undertake longer walks than before to collect water, wood fuel, fodder and other forest produces and this adds further hours to their already stretched working hours. The degradation of natural resources also impacts on the health, nutrition, education and housing (particularly for women and children). Girls are sometimes forced to discontinue their education in order to take care of their younger siblings. The girl-children also have to attend to all domestic chores and feed the animals while the mothers are away in the field attending to farm activities.

Consequently, in many rural communities common social features observed include; drop-out of girls from formal schools, early child marriage, early and frequent child births, malnutrition and poor health, maternal mortality, infant morbidity and mortality, large family size, poor sanitation, debts and poverty. This social phenomenon is a clear picture of vulnerability of women to poverty.

A combination of factors such as poverty, biased land tenure, and high population has led to unsustainable use of the land and this reduces supply of

food thus threatening human life (FAO, 1996). Rural families must constantly negotiate their livelihoods by obtaining access to natural resources, labour, capital, knowledge, and markets. Successful negotiation leads to enhanced family well-being and sustainable use of natural resources. Unsuccessful negotiation threatens family survival, threatens sustainable use of natural resources, and reduces bio-diversity. Gender relations mediate these negotiation processes.

In the study area, women are involved in the use and management of natural resources. The existing traditional gender relations often mean that women are always underrepresented in natural resource decision-making and programmes. There is need to have a better understanding of the relative and often shifting roles of men and women in agriculture and natural resource management, with respect to decision-making, use of traditional knowledge, division of labour and traditional practices that exist between women and men.

The study intends to highlight the role that women play in the sustainable use of land. The findings of the study can be used to inform the policy on sustainable use of land use.

1.6. Area of Study

Malava area is situated in the heartland of Western province, generally endowed with good fertile soil. It lies in a high potential zone with above average rainfall in an environment where agriculture is the main predominant activity accounting for over 75% of the income earning activities. The rural economy of this region is characterised by small-scale mixed farming, which includes subsistence and cash crops. Sugarcane

growing is the main agricultural activity in Malava, with West Kenya Sugar factory being the main user of the cane grown. Currently, another factory is under construction in Butali location in Malava district. Apart from sugar cane growing there is also the cultivation of maize, Sweet potatoes, tomatoes and onions among other traditional food crops. Livestock rearing is also prevalent in the area.

The area is predominantly inhabited by the Luhya community. This community operates a patriarchal system. This means that land ownership is male dominated and decision-making a male prerogative. Even where the male population has migrated, women still have to obtain permission on use of land and the income accrued.

In the study area, women are predominantly engaged in agricultural activities, ranging from cash crop production of sugarcane and maize to food crops such as tomatoes, onions and sweet potatoes. These women also engage in animal husbandry. These activities are largely land based hence their role in land management cannot be under estimated.

1.7. Scope and Limitation of the Study

The study sought to access the views of occupants and users of land irrespective of their ownership status with a view of identifying issues related to gender management of natural resources, specifically the role that women play in land management and their contribution to family well-being in rural Kenya.

The study was limited to Malava District in Western Kenya. The location was purposively sampled due to the fact that it lies in an agricultural area.

Further it is a rural setting where women are actively engaged in agricultural activities.

Due to financial constraints the sample size that was selected was fifty-six (56) respondents. Thirty-five (35) women and twenty-one (21) men who have resided in the locality for five years or more were interviewed.

1.8 Assumptions of the Study

The study was guided by several assumptions. These were as follows, that;

1. Women play an active role in agricultural production in the sugar-belt of Malava district.
2. There is a high participation of women in land management activities in Malava district.
3. Traditional gender roles have an impact on women's role in land management.
4. In as much as women actively participate in land management and agricultural production, the majority do not own land titles.
5. The lack of land title ownership leads to unsustainable use of land

1.9. Definition of Key Terms

1.9.1 Access and Control

Productive, reproductive and community roles require the use of resources. In general, women and men have different level of both access (the

opportunity to make use of something) to the resource needed for their work and **control** (the ability to define its use and impose that definition on others) over those resources (UNDP 2000).

Access to resources gives people capability to build their livelihoods. "Assets are not only 'things' to allow survival, but they are also the basis of agents of power to act". Access, differs from control, in that the latter implies a form of ownership or rights to the resource (Meinzen-Dick etal; Agarwal, 2001). A gender perspective on access and control over resources contributes to the notion of sustainability. For example, women's knowledge of seed selection is important for maintaining biodiversity. Access to and control over resources is important to women if they are to manage resources sustainably. For the purpose of this study access and control is a determinant of sustainable land management.

1.9.2. Gender division of labour

Application and utilisation of labour determines who does what with the available natural resource and capital in production of good and services. Traditionally various roles have been allocated to men and women according to cultural norms ancfsocial perceptions that have determined the way these resources are applied within a family environment. This study considers the community activities that are carried out by men and women as assigned to them by their culture.

1.9.3. Land Tenure

Okoth-Ogendo says that a search for the tenure system operative in a particular society is an attempt to answer the tripartite question as to who

holds, what interest, in what land (Okoth-Ogendo 1991). Land tenure refers to possession or holding of the rights associated with each parcel of land.

According to Malcolm, land tenure refers to the length of time a **given household** has rights to the use of land and the amount of land each **household** can control at a given time (Malcolm D. 1994).

There are four common land tenure categories in Kenya. These are;

1. **Owner-operator system** - where the household ownership of land is based on a certificate such as land title deeds;

2. **Lessee** - here the household leases an area of land from the government in return for an annual cash payment;

3. **Stewardship agreement** - where the household enters into a formal agreement with the government for use of a special area of land. This is usually for a specified period of time; and

4. **Squatters** - where the household occupies and uses land without having legal possession or land use rights.

Thus, land tenure in this study will apply to indicate the systems of access and ownership of landin this country.

1.9.4. Natural resources

Resources are means and goods including those that are economic (household income) or productive (Land, equipments, tools, work, credit), political and time. Natural resources are naturally occurring substances in their relatively unmodified (natural) form. This can be renewable or non-

renewable. For the purposes of this study, natural resources will be used in reference to land and those things attached to it that are used as a means of generating income, such as trees, crops and livestock.

1.9.5. Natural resource management

Natural resource management entail the responsible exploitation, utilisation and conservation of land. For the purposes of this study, natural resource management will mean the sustainable use of land for optimal maintenance of the level of agricultural and livestock production.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1. Introduction

In May of 1998, a group of researchers with an interest in gender met and shared experiences and insights about the management of natural resources and the pursuit of rural livelihoods at the Seventh International Symposium of Society and Resource Management. In this meeting, engendering discussion on development was prominently featured. It was recognised that if proper utilisation of natural resource for sustainable development was to be achieved, the role of women can never be ignored.

As rural women rely heavily on natural resources for the survival of their families, the deterioration in the natural resource base is threatening rural livelihoods. Population pressure and lack of awareness also makes rural women tend to exploit land, water and forest resources without considering the needs of future generations, thereby running the risk of eventually becoming part of the vicious downward spiral of hunger, poverty and suffering. However, research increasingly also acknowledges that due to their special knowledge of the environment, and their multiple roles, women are now increasingly acting as agents of positive change and have taken leadership roles in environmental conservation. They are for example involved in tree planting such as the Green Belt Movement in Kenya which aims at preventing the spread of desertification (UNEP 1995).

In their Summary Report, the Institute of Economic Affairs (IEA) reveals that in Kenya women provide 75% of agricultural production contribute

96% of the family labour and earn 60% of farm income, yet they own only one percent of the land (IEA 1998, 71). Despite the growing recognition of women's dominance over men in terms of use and management of natural resources, their contribution is still undervalued (*The Hindu,* 2004; WHO, 2000) as evidenced by the perpetuation of gender-blind policies and programmes. This is probably due to the predominant misconception that women's roles, although very significant, are concentrated in the domestic sphere, dealing mainly with (unpaid) domestic work (general childcare and household work such as cleaning, food preparation, fetching water and firewood and ensuring environmental sustainability).

A look at household structures reveals that despite women's active involvement in land management, it has been noted that the division of labour and decision-making roles within households has largely remained unchanged (FAO, 1997).

2.2 Women in Natural Resource Management

2.2.1 Gender roles and land management

Throughout the developing world, women are significantly involved in the use and management of natural resources. Yet, women are always underrepresented in natural resource decision-making and programmes. A study conducted by Women and Population Division of FAO in 1990 revealed that in developing countries women provide 70 percent of agricultural labour, 60-80 per cent labour for household food production, 100 percent labour for processing the basic food stuffs, 80 percent for food storage and transport from farm to village, 90 percent for water and fuel

wood collection for households, yet in most cases did not own the land in which they carried out these developmental activities.

Agricultural production depends largely on the labour force of rural women. Except for ploughing, women are the dominant labour force in agricultural production. Even though the contribution of women is considered supplementary and has remained unacknowledged, it is the women's roles ranging from that of managers to landless labourers. They tend to work 2.5 times as many hours as men. For example FAO found in the Indian Himalayas, on a one-hectare farm, a pair of bullocks work on average 1,064 hours, a man 1,212 hours and a woman 3,485 hours in a year (FAO, 1999).

In the villages surveyed in India, there were only a few activities in agricultural production in which women were not actively involved. Women were basically found to be involved jointly with their male counterparts in activities such as irrigation, spraying of chemicals, application of fertilizer, and land preparation. Because of their important roles in irrigated agriculture, women have considerable knowledge of water resources, including quality and reliability, restrictions, and acceptable storage methods. FAO (1997) has rightly acknowledged *"given access to appropriate resources, [women] practice fallowing, crop rotation, intercropping, mulching and a variety of other soil conservation and enrichment techniques"* (Upadhyay, 2005).

In most societies division of labour and decision-making roles within households have remained largely unchanged. Women have been noted as benefiting in agricultural areas, mainly in terms of access to income from work such as growing vegetables, rearing livestock, contractual farming, collecting forest products, selling fishery products, etc.

On the issue of gender division of labour and natural resource management, it has been found that Kenya is a strongly patriarchal society and many discriminatory gender distinctions are deeply entrenched in social, cultural and political institutions (IEA 1998, 71). Due to the different roles and responsibilities a society assigns to men and women on the basis of their sex, capable human beings are often prevented from achieving their full potential and are not able to contribute fully to Economic development.

Economic changes and gender roles interact in several ways, with specific outcomes, affected by ethnicity, culture, policies, and economics. Thus, Moghadam has argued that the recent policy changes such as structural adjustment processes in developing countries have affected the economic power of men, integrated women into the labour force, and have eliminated traditional safety nets and altered social structures (Moghadam, 1995).

Research has established that the social structures in which these processes are embedded shape the activities pursued by both men and women, determining social relations which in turn shape access and control, the stewardship of natural resources, the construction of human and social capital, and the institutions that govern relations.

2.2.2 Access and control of resources

Agriculture is a major component of rural incomes, especially in any African country. Access to, control over, and management of these resources determine which activities are pursued, which goods may be produced, and whether the lives of rural families are enhanced or diminished. A person's resources and activities determine their ability to access, acquire, and control

the values created by labour and capital. In many cases, gender has a profound influence on the use of these resources (Ferguson, 1992).

Studies show that control over resources empowers individuals in ways that contribute to sustainable natural resource management. The ability of families to successfully negotiate their survival and possibilities for improved well-being are shaped or mediated by culture, society, policies, environment, and the global markets. There is an interrelation between access and control of diverse assets (natural, productive, human, cultural, and social), that allow rural people to improve their well-being. When access is limited or insecure, because individuals lack voice, the ability to sustain the natural resource base is endangered. As population and agriculture change, women tend to be marginalized, unless the change increases their control of resources (World Bank, 1989).

Lack of access to and control over resources by African women has been identified by numerous studies as the single most important cause of gender inequality on the continent. The socio-economic and political implications have also been repeatedly highlighted. The most important resource that women possess currently is their labour that is exploited by the patriarchal state and its patriarchs (Tamale 2004, 51).

Marginalization has a significant impact because women's expenditure patterns normally benefit the family. A gender perspective therefore allows us to understand the crucial need to empower women by understanding the consequences of the resources power to negotiate and opportunistic behaviours in natural resource management (Rakowski, 1995). Indeed, the greater the access to resources, and ownership of assets women have, the more empowered they are (Agarwal, 2001). This empowerment in turn increases welfare expenditures at the household level. Thus, understanding

the processes of empowerment and marginalization is essential to developing policies and alternatives that will facilitate transitions to an increased well-being.

Often women have access to natural resources through men (Zwarteveen and Meinzen-Dick, 2005). In this regards, many scholars have argued that the differences between men and women in control over resources and in property rights lead to inefficient management of natural resources, and threaten the welfare and food security of rural families (Agarwal, 2001; Zwarteveen and Meinzen-Dick, 2005).

2.2.3 Strategies for land management

It has been observed that the introduction of technology tends to displace women. Instead technologies should be defined to meet needs for the women rather than displacing them. The need to promote women's skills as land managers has therefore been emphasized. This is considered a decisive factor in the battle against land degradation (IFAD 1992).

Further, it has long been recognized that Information, Communication Technology (ICT) has a role to play in addressing challenges that are faced by many third world countries. ICT has been seen to contribute to the transformation of agrarian to industrial societies. Some success stories in making the best use of ICT for development include a small village in Peru that has succeeded in selling its agricultural produce in New York via e-commerce, and has raised household incomes fivefold (Sihanya and Odek in Outa *et al* 2006,171).

Improving rural women's access to productive resources including education, land, and fertilizers in Africa has been seen as one way of increasing agricultural productivity. Indeed, as studies shows, women play a major role in reproductive activities in terms of time invested in the production of goods destined for the household consumption beside those destined for the market, thereby directly increasing human, social, and cultural wellbeing. Therefore, increased women's participation would strengthen the effectiveness of local organizations and improves natural resource management. Hence the need to improve women's marketing skills cannot be over emphasized.

Studies have also shown how women are an important force in community-supported agriculture - a food system that manages resources in a more intense and sustainable manner than conventional agriculture. The gendered nature of this approach to farming and living represents a new way of interacting with the markets where small-scale agriculture can be more people-focused, more nature-friendly and community based (Agrawal 2001).

In many ways, natural resource management is a natural fit for collective action, because it requires an expanded time horizon and spatial scale to be effective. Therefore organising group farming has been seen to contribute to better use of modern technology. Though some activities, such as the use of high-yield variety crops can be employed on a plot-by-plot basis and provide benefits within a season, most natural resource management technologies have 'spill-over' effects that require larger-scale action, and have benefits that accrue only after years and, sometimes, generations. For example, while pest management may be effective within a season, its use on only a few select plots can have negative consequences for adjoining plots to which pests may retreat. Watershed management exhibits a long-term time horizon,

as well as the need for regional coordination to accrue benefits. Most technologies require some degree of coordination over space and time (Meinzen-Dick *et al,* 2005).

In their research papers, Blumberg *et al* found that most management programs for natural resources benefit from collective action, well-defined boundaries and this facilitates effective collective management. This may include a plot of forest reserved for common use to a certain community or coastline/fishery that is used exclusively by group members. The scale and excludability allows the group to regulate use, including prohibiting outsiders and enforcing sanctions on overuse by members.

Formal group-based extension approaches have also been adopted by many NGOs, as well as by large-scale government programs in Uganda and Kenya. As in the case of natural resource management, collective action for research and extension does not always serve all farmers equally. In particular, women are often less likely to be served by extension services; there remain important questions regarding whether groups are more likely to serve women farmers (Meinzen-Dick *et al,* 2005).

Another area where women have been seen to benefit from collective action is in finding market* for their produce. Collective action may offer an alternative to state and markets institutions. In practice it can also complement markets as well as government. This can be particularly important for poor and vulnerable groups, who are often at a disadvantage in many market relations, or who may suffer from missing markets. Examples include input and output marketing, agro-processing, infrastructure development, labour markets, as well as credit and insurance (Meinzen-Dick *et al,* 2005).

Appropriate land policies should recognize women's knowledge and respond to their needs concerning sustainable use land, and conservation of forest products including crops grown for food production, medicines, crafts and other purposes. While planning programmes for regeneration, special consideration should be given to ensure that women have access to common resources to support their livelihoods. Adequate representation of women in common property management committees should be mandatory. This will ensure sustainable management of all resources without compromising livelihood opportunities and gender equity.

2.2.4 Land tenure and its role in ensuring sustainable use of land

Equal rights of men and women as they relate to matters of land and property ownership are enshrined in several International Instruments including in the Universal Declaration of Human Rights, 1948; Vienna Declaration and Programme of Action, 1993; UN Millennium Declaration, 2000: Paragraph 6; International Covenant on Economic, Social and Cultural Rights, 1966; Convention on the Elimination of All Forms of Discrimination against Women, 1979; African Charter on Human and People's Rights, 1981; Beijing Declaration and Platform for Action, 1995; Istanbul Declaration and Habitat Agenda, 1996, but are not entrenched in the Kenyan system.

In the Kenyan legal system while the Constitution prohibits discrimination, including those made on the basis of sex, in practice, discrimination of women remains widespread. Women account for just 5% of registered landholders nationally and yet they contribute over 80% of the agricultural

labour force, 64% of subsistence farmers and produce approximately 60% of farm derived income (Ministry of Land and housing, 2005, 74).

The current land tenure systems have tended to emphasize the extinguishing of customary land tenure system, which provide some protection to women's access and use of land and replaced it with individual tenure systems and title deeds. Culture and customs continue to support registration and inheritance of land rights to men. Even where the Succession Act and land markets based on the principle of a 'willing buyer, willing seller are involved, they still do not favour women who are often vulnerable to poverty and male dominations (Ministry of Land and housing, 2005, 63).

The division of power between men and women in Africa is reflected in the unequal distribution of land. Many countries deliberately pursue policies that deny women ownership of land. For example in Uganda, while women are responsible for 60 per cent of cash crop production and 80 per cent of the production of food crops, only 7 per cent of registered landowners are women. This means that Ugandan women till and toil on land that they neither own nor control (Tamale, 2004).

Uganda underwent a land reform exercise in the late 1990s. Through aggressive campaigning and intensive lobbying, a coalition of women's rights groups succeeded in inserting an amendment to the 1998 Land bill that guaranteed spousal co-ownership of the matrimonial home. However, through political machination, the said amendment was missing from the version of the Act. To date, Ugandan women are lobbying for the reinstatement of what has come to be known as the *"lost clause"*(Tamale, 2004).

We must however recognize that in this era of globalization and neo-liberal economic reforms, land is steadily losing its importance as a resource in

some parts of Africa. Moreover, ownership of land for African women does not always translate into empowerment or real control of such land. For instance, there are certain traditional practices among many African communities that limit women's work with heavy farm implements or where it is taboo for women to plant or harvest crops (because of the belief that it will adversely affect yields). In such cases female landowners have to rely on male labour, which compromises their control over this particular resource (Tamale, 2004).

In Kenya, as in most developing countries, the land tenure system has an impact on land management. Culture and traditions have continued to support male inheritance of family land while there is lack of formulation of gender sensitive family laws. There is conflict between Constitutional provisions on gender equality vis-a-vis customary practices that discriminate women. Men generally dominate Land boards or tribunals. Women are sparingly represented in institutions that deal with land, their rights under communal ownerships and ranches are not defined and this allows men to dispose off family land freely. Few have land registered in their names and lack of financial resources restricts them from entering the land market. Moreover International Conventions on Women's Human Rights relevant to women's property rights ratified by Kenya government have not been translated into law (Ministry of Land and housing, 2005, 74).

It has been found that property rights and collective action issues are important constraints to the adoption of improved technologies and natural resource management practices that can help poor people and reduce environmental degradation. Many improved natural resource management practices require long-term investments, and farmers will only make these investments if they have sufficiently secure and long-term rights to their land so that they know they will reap the benefits of their investment. Many

natural resource management practices have to be undertaken by groups of farmers working together or they require effective community management of common property resources. Therefore tenure systems are important determinants of sustainable land management (Agarwal, 2001).

Property rights and collective action affect a wide-range of resource use and investment activities in the developing world. Prominent examples include grazing land practices and investments, forest and agro-forestry resource use and management, soil fertility, management and upkeep of indigenous irrigation schemes, watershed management, and fisheries management.

In many countries, land reform agendas have concentrated almost exclusively on privatization and individual titling, even though there is a general acknowledgement that privatization may not always offer the best solution to address certain efficiency, equity or resource sustainability objectives in either the short- or long-term. The key question that remains, however, is what types - and perhaps combinations - of property rights and collective action institutions are needed in different situations, in order to achieve the best patterns of development.

Conflicts between customary and statutory laws as a result of transition from indigenous land tenure systems to the western property concept of 'ownership'; Land registration converting multiple, situational and overlapping rights to individual, absolute and exclusive rights; Lack of legal status for communal decision making structures; State ownership and control of natural resources; Registration of land in the name of male head of household undermines women's rights; and individualization of land titles in face of expanding community population, are some of the challenges faced by women in land ownership.

On the other hand, it is has been argued that farmers can feel secure in their land without owning it individually. However, insecurity may rise in some cases due to demographic, economic or political pressures. Kenya has tried to avoid such tenure insecurity by undertaking adjudication and registration of individual titles in the relatively crowded agricultural areas (IFAD 1986). People with individual land titles have been seen to be more committed and interested in investing on their land in terms of putting in place conservation measures such as gabions and terraces.

A World Bank policy paper on land reforms (Falloux 1987) has the argument that sub-optimal use and management of agricultural land can largely be explained by the tenure regime under which farm households does. The same holds for a household whose legal claim to land is precarious. Recognizing the risk of future dispossessions, they will disregard conservation benefits that may only be realized after passage of several years. Further more in the case of share tenants and lessees, the landowner may not have given the farm household full rights to decide how land is to be used (Falloux, 1987).

UNEP argues that a common property framework can facilitate the collective action that is needed for integrated approaches to sustainable land use, through the pooling of knowledge and resources. Thus the recognition of traditional land rights and enforcement of those rights can provide the assurance needed by the poor to lengthen their time horizons and thus broaden their options for resource management (UNEP 1988). According to IFAD, this recognition needs to include traditional land tenure arrangements such as common property regimes, which are important for the sustainable use of resources under conditions of high ecological viability (IFAD 1980).

2.2.5. Land management strategies

The high population working in conjunction with other factors like lack of extension services is believed to have led to wide spread degradation of agricultural land. In fact, the breakdown of traditional systems of sustainable resource management has often been attributed to their inability to accommodate the needs of a growing population and in some cases the increasing numbers of livestock (FAO, 1991a).

It has also been noted in investigative literature that past attempts to conserve land have failed mostly because they do not recognize and address the interrelationship between poverty and natural resources. Both poverty and land degradation are as a result of tendencies inherent in our economic systems or externalize environmental and social costs of market transaction unless adequately checked by social and environmental policies and international agreements. At the same time, this externalization tends to enrich particular social groups at the expense of the population at large and in particular, the disadvantaged social groups who are marginal or external to the decision making process (FAO 1986).

It is not uncommon for a men-only natural resource management organization to take decisions on issues that affect primarily women, and to receive advice and training on natural resource management tasks that are implemented by women. An IFAD leasehold forest and forage development project in the hills of Nepal made great efforts to include women in all activities from the beginning, with female-headed households prioritized. However, because their rules stated that there could be only one legal member per household, the forest leasehold groups had mainly male members. Later there was some increase in women's membership, particularly of widows. As men migrated to seek

employment, women also sometimes took over the men's activities. However, after the first land development course, it was the group members - primarily males - who received training for the forest maintenance work. Yet it is the women who participate more actively. This is so partly because the women visit the forest more for fuel wood and fodder collection, but also for cultural reasons. Women do the pruning and thinning of trees and work in the nursery raising fodder species. Such work requires weeding and watering, which men consider to be women's tasks (IFAD, 1980).

UNEP (1998) thus describes rural women as suffering from the most pervasive disparity in access to resources. The flow of formal credit to women farmers is not normally geared towards small-scale farmers, and the lack of credit or extension services to women due to insecurity of tenure leads them to less productive farming practices like not using fertilizers or cultivating steep slopes with no terraces. Less food is obtained from such kind of farming while land is rapidly degraded due to severe levels of soil erosion. Women are thus seen as primary resource users and bear most of the responsibilities, for they do much of the work needed to maintain or restore the environment. Because of the nature of their responsibilities and their direct dependence on land-based resources, they are also the hardest hit by desertification, deforestation and misdirected economic policies. As a result, they are also the agents of environmental degradation (UNEP, 1998).

Another strategy that has to be considered in natural resource management is the inclusion of women in water management. Women are productive users of water, and are critical in bringing rural economies out of poverty. Often, the lack of recognition of women's role in managing water for productive as well as domestic uses has led to drudgery for women and to the impoverishment of rural households. It has been found that community-

based organizations have important roles to play in facilitating women's representation as productive users at all levels of water management (Agarwal, 2001).

Women are also using the strategy of formation of women's groups to strengthening one another. They engage in activities to generate income, improve health and general community welfare. They are also able to share experiences and to encourage one another. Some women groups have started diversifying into farming activities to earn income and to improve family health. Through these groups they are able to lease land for various faming activities, and it is observed that they are also able to access credit facilities which has been previously difficult for them (Blumberg *et al).*

Therefore, gender strategies on land management have become imperative. Women have to be involved in programme planning so that they contribute to identifying the most productive and efficient use of land and water to meet agricultural demand in a sustainable way. Women need independent access to resources, not only land and credit, but also institutional support and skills development. They need to be informed about the harmful effects of the increasing use of pesticides and fertilizers in agriculture and their own vulnerability to various health hazards.

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2.2.6 Conclusion

The goal of sustainable use and management of natural resources can be reached only through overall capacity building of women through education, and the provision of health care, user-friendly technologies and employment opportunities. To achieve this goal, policy makers, planners and development workers must have a better understanding of the relative and often shifting roles of men and women in agriculture and natural resource

management, also with respect to decision-making, use of traditional knowledge, division of labour and traditional practices between women and men.

Thus, a look into the existing literature reveals that empowerment of women in the management of natural resources in tightly linked to sustainable development. There is need, therefore, for policies that contribute to this empowerment, such that women's increased control of their income and voice in decisions contribute to a reduction in rural livelihood vulnerability, and its impact on the environment. This voice should be pursued in the context of the day-to-day management of resources and livelihood decisions, a responsibility that they bear in many communities. One cannot think of successful regeneration or social resource management in the absence of natural resource management with women at the centre of it.

2.3 Theoretical Framework

This study is based on the Marxist Feminist theory, expounded by Engels (1973), which postulates that during the formation of states, the gender hierarchy created class relations in which women were subordinate to men. According to this theory, class and patriarchy were closely related and they produced social inequality between the genders.

Gender refers to the "socially determined ideas and practices of what it is to be female or male." These ideas and practices are sanctioned and reinforced by a host of cultural, political, and economic institutions, including the household, legal and governance structures, markets, and religion. While gender roles vary among cultures and over time, and are crosscut by a multitude of identities (e.g. ethnicity and class), the gender division of

labour usually finds men and women relegated to the public and private spheres, respectively (Agarwal, 2001).

Engels argues that the emergence of private property and its ownership by men led to the subordination of women. He relates changes in gender relations to material conditions because of ownership of productive property that is vested in men.

Traditional feminists who use the Marxist theory see women's relegation to the private sphere and men to the public sphere as leading to the subordination of women, thus leading to the lack of recognition of women's contribution and in this case in land management. This means that men undertake public activities, e.g. remunerative work and market activities, membership in formal community organizations, and participation in political institutions. Women's activities, in turn, often are confined to household and community management activities (childcare, food preparation, subsistence agriculture). Moser refers to women assuming a triple role, i.e. they are responsible for reproductive, productive, and community management activities, and receive little recognition for their unpaid work (Moser, 1989, 159).

The Marxist theories^lso see the emergence of the household as an isolated unit, which is economically responsible for its members as contributing to the gender division of labour, in which women's labour is seen as a private service which is unrecognised while men's activities are public and remunerated.

The organization of marriage shapes dominant notions of gender. It is through claims made in marriage negotiations that cultural conceptions about gender are constructed, and the household as a non-unitary entity in which gender is constantly recreated and reproduced. "Social contracts"

entered into in marriage determine the extent to which resources in land or in people are at the disposition of a household head, or at the individuals recruited into the household. Power differentials in the household are always being challenged and members of the household develop particular strategies to increase access to resources.

On the other hand, theories of Women, Environment, and Development (WED), highlight women as having a special relationship with the environment due to their responsibilities for the family and concern for the well being of future generations. In this approach, women are seen as "a *transcultural and transhistorical category of humanity with an inherent closeness to nature'* and thus likely to be the principal managers of the environment at local level.

All these theories support the argument that gender differences in natural resource management are not due to women's inherent closeness to nature but due to "*...dynamic and complex gender identities in which men and women experience both shared and divided interests*" (Jackson, 1998, 315). Gender differences in environmental relations and management should be understood as, and equated with, social relations. Gender differences in needs and endowments are seen as key determinants of ways in which men and women manage natural resources.

Gender relations have been identified as important determinants of natural resource management. The relationship between women and nature is frequently analyzed in terms of the increasing dependency on natural resources by poor rural women due to poverty. In what has been termed the feminization of poverty, women have been identified as often carrying the main burden of poverty due to the over-representation of female-headed households among the poor who depend more on natural resources.

In this study it is argued that gender roles determine division of labour and the gendered distribution of resources. Gender roles therefore see the community mainly in terms of who does what, when, how, and who has what. Since women have being theorized to traditionally be confined to productive activities, which include natural resource management. They spend a lot of time in agricultural activities, which is dependent on land. Hence their role in land management needs recognition.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This chapter presents the methodology that was used to carry out the study. It gives an outline of the research site, sampling design and technique that was used, outlines the research population and unit of analysis and concludes by stating methods of data collection.

3.2 Research Site

The study site selected was Malava in Western Kenya. Malava district is situated in the heartland of Western province, generally endowed with good fertile soil. It lies in a high agriculturally potential zone. The area receives above average rainfall.

Agriculture is the main predominant activity accounting for over 75% of the income earning activities (Republic of Kenya 2004). The rural economy of this region is characterized by small-scale mixed farming, which includes subsistence and cash crops. Sugarcane growing is the main agricultural activity in Malava, with West Kenya Sugar factory being the main consumer of the cane grown.

3.3 Study Design

The study was carried out utilizing both primary and secondary data that was both qualitative and quantitative. The research was conducted for the duration of two weeks. The primary data was collected through an interview administered using semi structured interview schedule. Before the actual research, a pre-test of the interview schedule was undertaken. The interview schedule instrument was then finalised for the actual research.

3.4 Study population and unit of analysis

The study population was either male or female in individual households resident in Malava for duration of five years, who had access to land irrespective of their title.

3.5 Sampling Strategy and Sample size

The Study used purposive sampling technique. In this technique, respondents were not scientifically selected but were selected based on convenience of access. Any respondent who was involved in land management activities was selected for interview.

Since the study was interested in establishing the role of women in land management, the number of women interviewed was deliberately higher than the number of men. Thirty-five (35) women and twenty-one (21) men were interviewed.

3.6 Operationalisation of Variables

Natural Resource Management was conceptualised as the sustainable use of land for optimal maintenance of the level of agricultural production.

The role of women was conceptualised as the activities that women undertaken in agricultural production and land management.

Land tenure systems was conceptualised as the possession land whether through the absolute ownership of title, acquisition of leasehold, or possession as squatter.

3.7 Methods of data collection

The survey technique was used to administer a semi-structured interview schedule that had been developed to elicit information that was relevant to the study. Fifty-six (56) questionnaires were administered to women and men who had been purposively sampled.

The interview schedule inquired about level of education, marital status, occupations, land ownership, participation in land management and control of resources. The interview schedule comprised both open and close ended questions.

3.8 Methods of data analysis

The data collected was captured and analysed using Statistical Package for Social Scientists (SPSS). This package generates, summarises and gives percentage distributions. Interview schedule instruments were coded and then analysed using techniques of regression analysis and cross tabulation of variables. Data was then presented in form of tables and prose.

CHAPTER FOUR

4.0 ANALYSIS OF DATA

4.1 Introduction

The results of data analysis are presented and discussed in this chapter. As alluded to earlier, the data was analysed using bivariate analysis such as cross-tabulations, and regression. The first section gives the basic characteristics of the women studied. The presentation is then followed by a discussion of the cross-tabulation of various variables. The averages of the dependent variables are also given.

4.2 The Role of Women in Land Management

The Study sought to affirm the role of women in land management in the study area. Table 1 gives results of the variable on whether women have a role in land management.

Table 1: Role of women in land management

SEX	**Yes**	**No**	**Not stated**	**Total**
MALE	12	4	5	21
%Within sex	57.1	19	23.8	100
FEMALE	32	2	1	35
% Within sex	91.4	5.7	2.9	100

The research clearly indicated that women perceive themselves and are also perceived by a majority of their male counterparts as playing a role in land management. Analysis of Table 1 above shows that both male and female respondents recognised women's role in land management.

When asked the question: 'Do women play a role in land management?' 91.4 percent of the women respondents felt that they indeed play a role, while 57.1 percent of the men respondent also held the view that women do play a role.

It is also clear that women were more willing to assert that they have a role in land management. The fact that 57.1 percent of the men thought that women have a role in land management may be a tacit recognition that there is a degree of social resistance to acknowledgement of women's role in matters of agricultural development probably stimulated by long held traditional belief which ensures that even when a positive outcome is received from women, the society feels inclined not to acknowledge efforts of their achievements.

The role of women in land management can also be seen in the number of hours that they spend in doing farm work. The question was posed to the respondents on the number of hours that an individual spent in the farm per day. This was categorised in those who said they spend more than 3 hour and those who responded that they spend less than 3 hours, and was tabulated in Table 2.

Table 2: Time Spent on farm

SEX	Less than 3hrs	More than 3hrs	Not stated	Total
MALE	2	19	0	21
%Within sex	9.5	90.5	0	100
FEMALE	3	27	4	35
%Within sex	8.6	77.1	2.9	100

According to the response, the majority of female respondents (77.1 percent) spend more than three hours on the farm, almost matching the 90.5 percent of the male respondent who said that they spend more than 3 hour on the farm. This can partly be attributed to multiple roles played by women as opposed to men who are believed to be playing single roles.

Women said that they also spend time in household chores and in trying to enhance the family income through other means. This indeed came out clear on the variable on gender roles, and how the participants spend their time, as represented in Table 3.

Beside, the reason for a higher percentage of men saying that they spend more than 3 hours in the farm can be explained by the study indicated in the Table 3 below, which* came up with the fact that beside the hours spend by women in the farm, most of them had to also spend time at the market while the men seem to be engaged in only one activity hence their spending more time in this activity.

4.3 Gender Roles in Land Management

Gender roles can be determined by how individuals spend their time. An analysis of how respondents spend their time is given below.

Table 3: Ways of Spending Time on a Daily Basis

Sex	At my business	At the farm	Not stated	At farm + selling at the market	Domestic work + selling in the market	Farm + employment	At employment	TOTAL
Male	0	7	7	2	0	2	3	21
% Within sex	0	33.3	33.3	9.5	0	9.5	14.3	100
Female	2	1	3	23	6	0	0	35
%Withii^ sex	5.7	2.9	8.6	65.7	17.1	0	0	100

In Table 3, the gender division of labour was analysed based on how men and women spend their day. The statistics here indicated that the majority of women spend their day at the farm and also at the market selling the farm produce and other items to contribute to the family welfare.

Whereas 33.3 percent of the men indicated that they spend their time at the farm compared to 2.9 percent of their women counterparts, 65.7 percent of the female respondents indicated that they spend their time in both the farm and at the market. No man indicated spending his time both at the farm and at the market. This is a clear indication that marketing is predominantly a female activity as is domestic activities in which no man reported participating in. The results confirm findings in literature, which indicate that, generally women undertake reproductive activities.

It indeed came out clear from interactive interviews accompanying the questionnaire that as regards the utilisation of land, most rural women

carried out multiple duties and had multiple roles in enhancing optimal utilisation of the land resources.

The data also indicates that no women respondent were in any formal employment, while 14.3 percent of their male counterparts spend their time in employment. This shows that women are more dependent to a great extent on the land and its produce and that the men who also beside the land earn from other employment which is unrelated to utilisation of land.

Besides, those men employed (who made up 23.8 percent of the respondents) the majority (14.3 percent) spend their time in their employment while only 9.3 percent of them undertook dual roles of working at the farm besides undertaking their employment. In fact, many of the participants felt that in a scenario where more and more men got employed in the formal sectors like in teaching and administration, the more women were left with the agricultural responsibility of land management.

Another way of determining the role of women in land management can be derived from who assists in faming activities. This is explained in Table 4.

Table 4: Assistance in Utilisation of land

Who Assists?	None	Sons	Sons and Daughters	Paid workers	Sons, Daughters and paid workers	Not Stated	Total
Male	**3**	**1**	**10**	**7**	**0**		**21**
	14.3%	**4.8%**	**47.6%**	**33.3%**	**0**		**100%**
Female	**6**	**7**	**12**	**8**	**1**	**1**	
	17.1%	**20%**	**34.3%**	**22.9%**	**2.9%**	**2.9%**	**100%**

From the Table 4, more women reported not being assisted in their farm work 17.1 percent compared to men of whom only 14.3 percent said that they were not assisted in their farm work. This can partly be explained by the social configuration of gender roles. Women are expected to work on the farm without assistance as this is part of their reproductive role.

It was also clear that more men could afford to get assistance from paid workers, with 33.3 percent of those sampled responding that paid workers compared to 22.9 penfent of the women who reported being assisted. This can be partly attributed to the fact that women have less income than men to pay for labour on their farm.

Women on the other hand got most of the help in the farm from the family being assisted in the farm work by both girls and boys with a small percentage reporting assistance by paid workers.

4.4 Land Control and Ownership

The research sought to find out what size of land on average a person had under their control in the area of study, whether owned, leased or otherwise available for the individual to utilise.

Table 5: Land control

Sex	Less than 2 acre	More than 2 Acres	Total
Male	9	12	21
	42.9%	57.1%	100%
Female	21	14	35
	60%	40%	100%

From the participants' responses as tabulated in Table 5, as expected, men had more land under their charge than their female counterparts. 42% of the male respondents said they had less than 2 acres to utilise, while for the women, 60% said they had less than 2 acres of land to utilise. It is therefore clear that ownership and control of land is still heavily vested on the men in this area, in as much as it was the women who mostly work in the land.

Moreover, it is also clear that in terms of ownership of land, it is men who own land as is indicated in the table below.

Table 6: Land Ownership

Sex	Self	Husband	Other	Total
Male	**21**	**0**	**0**	**21**
	100%	**0%**	**0%**	**100%**
Female	**7**	**26**	**2**	**35**
	20%	**74.3%**	**5.7%**	**100%**

As presented in Table 6, when the respondents were asked who the owners of the land in their possession were, the majority of men said they owned the land or had leased the land. (However, it was not clear if the claim of ownership included the parcels of land that had been leased for short periods of time or not by the respondents or entirely belonged to the respondents).

In the case of women, the majority of the participants responded that the land they utilised belonged to their husbands (74.3%), and only a minority of women owned the land (20%). Women mostly acquired possession of land through other persons, including through their husbands and through titles belonging to other persons.

Decision-making is an important determinant of control of resources. The study sought to find out who decides what to grow on family land because this is an important component of land management.

Table 7: Decision on what is grown on land

Lease	Self	Spouse	Both	Not Stated	Other	Total
Male	10		11			21
	47.6%		52.4%			100%
Female	9	9	15	1	1	35
	25.7%	25.7%	42.9%	2.9%	2.9%	100%

The findings in Table 7, which gives an analysis of who makes decisions on what is grown on the land. Interestingly the majority of men (52.4%) reported that both spouses make decisions on what is grown on the land while 47.6% reported making decisions by themselves. The majority of women at 42.9 percent of women respondents reported that both spouses make decisions on what is grown on the land while 25.7 % reported being the decision makers. Another 25.7% reported that their spouses are the ones who make decisions on what is grown on the land. It can be concluded that in decision making both spouses are involved.

The study also sought to find out means of land acquisition. It had been speculated that land in the area of study is either bought or leased for the purpose of agricultural production.

Table 8: Lease of land

Lease	Yes	No	Not Stated	Total
Male	**10**	**3**	**8**	**21**
	47.6%	**14.3%**	**38.1%**	**100%**
Female	**10**	**18**	**17**	**35**
	28.6%	**22.9%**	**48.6%**	**100%**

From Table 8, it was evident that the practice of leasing land for farming is common in the study area. 47.6 percent of the men reported leasing land for faming while 28.6% of the female respondents also reported doing the same. It was thus clear that the men respondents had more capacity to afford leasing land from other people for farming as well as owning the land themselves, than in the case of their women counterparts.

4.5 Effect of Land Tenure on Land Management

The effect of land tenure on land management was analysed using regression analysis. The Table below gives the results of relationship between land title ownership and management of land. It had been hypothesized that ownership of titles is positively related to proper land utilization.

Table 9: Relation between title ownership and land management

R	R Square	Adjusted R Square	Std. Error of the Estimate
.183	**.033**	**.015**	**1.2708**

From the output in Table 9, with the adjusted R Squared of 0.015 and a Standard Error of 1.27, it is evident that there is no relationship between land ownership and how it is managed. It can therefore be concluded that management of land is not dependent on ownership in the study area. It can also be concluded that since women in the study area do not own the land but have a responsibility for land management and they can manage the land responsibly.

This goes to confirm the results in Table 8, which showed that the practise of leasing land is prevalent in the study area and that even where such practice is undertaken land is still properly, managed.

4.6 Strategies for Land Management

The research showed that there are various strategies that women employ in land management. These include mixed cropping, intercropping, crop rotation, and use of proper farm inputs such as fertiliser.

Table 10: Strategies for land management

Sex	Farming	Crop rotation *m*	Mixed farming	Not stated	Proper farm inputs	Mono cropping	Total
Male	3	3	5	9	1	0	21
% Within sex	14.3	14.3	23.8	42.9	4.8	0	100
Female	8	8	11	6	0	2	35
% Within sex	22.9	22.9	31.4	17.1	0	5.7	100

From table 10, the majority of respondents practice some form of proper land management. 31.4 percent of the women practice mixed farming and 22.9 percent practise crop rotation respectively. However, some women also reported some improper land usage. 5.7 percent of the women responded that they employed mono cropping. According to the table no woman reported use of utilised proper land inputs. These findings are in agreement with other findings, which have concluded that women's participation in agriculture is usually hampered by lack of modern technology.

Therefore, it can be concluded that women practice recommended farm management practises that controls loss of soil fertility and increases farm productivity, but are mostly hampered in this by lack of financial resources that would promote proper land use.

CHAPTER FIVE

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

This chapter presents conclusions that are derived from the study findings. Arising from the findings of the study and based theoretical framework that guided the study, the following conclusions can be deduced:

The study sought to determine the role of women in land management in the sugar belt of western Kenya. From the findings it was found that women play an active role by the number of hours that they are engaged in farm work. The study found that majority of women spent three or more hours per day in farming activities. The majority of women were reported to be engaged in farm work and selling of farm produce. These findings are in agreement with finding from literature, which showed that most rural women are involved in farming activities and marketing of farm produce.

Gender roles in the study area are traditionally defined, with majority of women being responsible for reproductive activities while majority of the men are involved in paid employment. The study also found that both men and women are actively involved in decision making unlike in most findings from literature. It can be concluded that women are engaged in traditional reproductive roles.

The study found that the majority of residents in the study area did not own titles for the land they farm. This goes to confirm findings from literature, which has found that women usually do not posses titles for land. It can be concluded that there is no there is no effect between land tenure systems and efforts women make in land management.

The study found that there are a number of farming techniques that women employ in land management. These include mixed cropping and crop rotation. There is therefore need to promote and educate women on modern farming techniques since their involvement in farming activities is high. It can be concluded that women employ mixed strategies even though the majority of them do not own land.

In conclusion it can be said that the goal of sustainable use and management of natural resources can only be reached only through overall capacity-building of women through education, and the provision of health care, user-friendly technologies and employment opportunities. To achieve this goal, policy makers, planners and development workers must have a better understanding of the relative and often shifting roles of men and women in agriculture and natural resource management, also with respect to decision-making, use of traditional knowledge, division of labour and traditional practices between women and men.

5.2. Recommendations

Arising from the findings of the study the following recommendations are made; since women have a role to play in land management there is need to

1. *Promote women's participation through provision of financial resources-*

Banks ought to create structures for advancing loans to promote women's small scale farming. For example, Equity bank has come up with a scheme to fund women entrepreneurs. If the target group of this scheme would be extended to include women farmers, then the productivity of women

cultivated farms will be enhanced. This has been experimented in Nepal/Bangladesh with a measured successful result.

Beside Banks, other lending institutions also need to be encouraged through positive government policies such as tax rebates and other incentives to provide loans to rural women farmers. Credit Cooperative societies and Agricultural financial institutions could be targeted for such financial arrangement.

The government on its part ought to come up with inclusive policies that would to only target small-scale business enterprises, but extend also to small-scale agricultural activities. This can be done through the framework of the current women's fund, a potion of which could be set aside to be used in agricultural development.

2. *Train women in modern farming techniques-*

In order to reduce the number of hours they spend on the farm, women ought to be trained in adoption of modern faming techniques that would enhance the productivity of their parcels of land. Though, diverse noteworthy methods have been adopted, such as crop rotation, usage of fertilises and choice of Morden more productive seed varieties.

The agricultural extension officers should be encouraged to target women farmers for training in better farming techniques

3. Assist women market their farm produce-

The research has established that most women spend their time between working in the farm and marketing the produce. Structures for cooperative marketing of farm produce ought to be encouraged by the extension for

example of cereal boards to remote areas where women can take their crops and sell it at a good price.

The financial institutions could also promote financial advancement for cooperative marketing to secure any loans that have been advanced to the small-scale women farmers.

4. *Promote women's access to and control of resources-*

Women spend most of their time on reproductive activities and farming. It has also been found that most of their income goes towards family welfare. It is therefore very important to put in place legislative measures to ensure that women are not denied the right to control resources they have worked for.

5. *Restructure land policies-*

It is noteworthy from the study that traditional belief and cultural attitude that disentitle women are still prevalent in the country. Positive legislative and policy framework ought to be formulated to ensure that the rights of women, especially in securing ownership of land are secured in law and in practice.

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Affirmative action should be undertaken if women are to adequately invest in land and other capital assets to develop their productive potential.

6. *Conduct further studies to confirm the findings of the study-*

Since the scope and coverage of this study was limited, there is need to conduct further studies in this area.

DATA COLLECTION INSTRUMENT

UNIVERSITY OF NAIROBI

INSTITUTE OF ANTHROPOLOGY, GENDER AND AFRICAN STUDIES

Confidential

The information provided is for education purposes and will be treated confidentially

Part A: Details of Respondent

1. Name

2. Sex

3. Duration of stay

4. Level of education

5. Marital status

6. If married, spouse's occupation

7. Number of children,

8. (a) Are you employed?_____Self-employed

(b) If employed, state occupation

9.(a) What are your earnings from employment per year

(b) What are your earnings from land per year_____season

Part B: Land ownership

10. What is the size of the land you occupy?

11. Who owns the land? Self_____Husband_____Leased_____Other (specify)

12. If self, do you possess title

13. If leased, for how long?

14. Apart from the land you own, do you lease land for farming?.

Part C: Participation in land management

15.(a) What crops do you grow on your land?

(b) What crops do you grow on leased land?

16. What size for food crop_____cash Crop_____livestock

17. How do you spend your day

18. How many hours do you spend in the farm per day?

19. Who assists you in the farm work? None_____Daughters.

Sons_____Both_____Paid workers

20. (a) What activities do boys engage in?

(b)What activities are girls involved in?

21. How do you manage your land?

22. How do you think land can be properly used?

23. In your opinion do women play any role in land management?.

Explain

Part C: Control of resources

24. Who decides what is grown on the land?

25. If you keep livestock,

(a) Who do they belong to?

(b) Who decides when to sell them? Self Both

26. Who decides how do to use the money?

(a) From the Cash crops? Self_____Husband

(b) From food crops? Self_____Husband

(c) From livestock sales? Self_____Husband

(d) From livestock produce? Self_____Husband

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