

**“THE INVISIBLE HALF” RECOGNIZING THE ROLE OF KENYAN WOMEN IN
AGRICULTURAL PRODUCTION:
THE CASE OF KARACHUONYO SMALL HOLDER FARMERS**

JUDITH AKOTH OTIENO

N69/77432/2012

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

University of NAIROBI Library

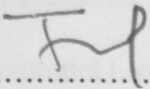


0432024 8

OCTOBER 2014

DECLARATION

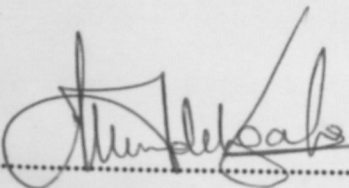
This project paper is my original work and has not been presented to any university or institution for the award of a degree.

Signed  Date 11/11/2014

JUDITH AKOTH

(N69/77432/2012)

This project has been submitted for examination with my approval as the university supervisor

Signed  Date 11/11/2014

Dr. Owuor Olungah

DEDICATION

I dedicate this work to the Almighty God. The much I have achieved is because of your mercy and love. Thank you for the strength and good health throughout the study period.

To my late Mum Syprina Akinyi you were and still remain my source of inspiration. I aim to reach the heights and standards that you set while on earth. There is nothing I can do to show you that you are my role model hence I dedicate this paper to you.

My husband Kennedy Nanga, my Children Byrone, Taliah, Kimberly and the youngest Jelani, you have been my family pillar!

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to all those who have contributed in one way or the other to the success of this scholarly work. Here are just but a few.

To Dr. Charles Owuor Olungah, my deepest gratitude for your valuable comments and support. This paper is a product of your unmatched support, positive criticism and encouragement. Thank you so much.

My sincere gratitude goes to the lecturers of the Institute of Anthropology, Gender and African Studies. The knowledge I acquired in class was very vital for the production of this work.

My sincere gratitude to my dear family for being patient with me and letting me realize my dreams. You are and will always be my source of inspiration, I love you all.

My classmates, for the team spirit, friends and relatives too numerous to mention please receive my heartfelt thanks. I owe you a lot. I equally acknowledge the participants and respondents in this study. You took your valuable time and provided the necessary information for this work. Be blessed.

Most importantly, I thank the almighty God without whose favour this study would not have been completed.

Thank you all!

TABLE OF CONTENTS

TABLE OF CONTENTS	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ACRONYMS AND ABBREVIATIONS	ix
ABSTRACT	x
1.0 CHAPTER ONE: BACKGROUND TO THE STUDY	1
1.1 Introduction	1
1.2 STATEMENT OF THE PROBLEM	4
1.3 OBJECTIVES OF THE STUDY	6
1.3.1 Overall Objective	6
1.4 JUSTIFICATION OF THE STUDY	7
1.5 SCOPE AND LIMITATIONS OF THE STUDY	8
1.6.1 Agriculture.....	9
1.6.2 Gender	10
1.7 ASSUMPTIONS OF THE STUDY	10
2.0 CHAPTER TWO: LITERATURE REVIEW	10
2.1 Introduction	10
2.2 The Position and the Role of Women in Agricultural Production	11
2.3 Gender Differences in Roles and Activities in Agricultural Production.....	13
2.4 The Socio-cultural factors limiting women's participation in Agricultural Production	16
2.4.1 Women's Land Rights and Customary Systems.....	16
2.4.2 Farm Inputs.....	19
2.4.3 Unsuitable or Lack of Extension Services and Training.....	20
2.4.4 Access to credit and Finance	21
2.4.5 Agricultural Research and Technology	23
2.4.6 Market Services	24
2.4.7 Education	24
2.5 Overcoming socio-cultural constrains that limit women's participation in agriculture	27

2.6 Theoretical Framework.....	30
2.6.1 Gender Planning Approach.....	30
2.6.2 Relevance of the Theory to the Study.....	31
3.0 CHAPTER THREE: RESEARCH METHODOLOGY.....	34
3.1 Introduction.....	34
3.2 Research Site.....	34
3.3 Research Design.....	36
3.4 The Study Population.....	37
3.5 Sample Population.....	38
3.6 Sampling Procedures.....	38
3.7 Data Collection Methods.....	39
3.7.1 Questionnaire Survey.....	39
3.7.2 Key Informant Interviews.....	39
3.7.3 Secondary Sources.....	40
3.8 Data Analysis and Interpretation.....	40
3.9 Ethical Considerations.....	41
4.1 Introduction.....	42
4.2 General Information.....	42
4.3 Socio-Demographic Characteristics of the Respondents.....	42
4.3.1 Gender Representation of the Respondents.....	42
4.3.2 Age of Respondents.....	43
4.3.3 Marital Status.....	44
4.3.4 Education Level of Respondents.....	44
4.3.5 Knowledge and Skills in Agriculture of the Respondents.....	45
4.4 The Socio-Cultural and Economic Factors in Women's Participation in Agriculture.....	46
4.4.1 Education, Decision Making and Family Size.....	46
4.4.2 Access to Farm Inputs.....	51
The figures are in percentages.....	53
4.4.3 Access to Extension Services.....	53
4.5 Socio-Economic Factors Undermining the Role of Women in Agricultural Production.....	55
4.5.1 Agricultural Production Resources.....	55
4.5.2 Importance of Seeking Women's Opinion in Agricultural Production and Marketing Activities.....	57
4.6 Best practices for enhancing women visibility in agricultural production.....	59
4.6.1 Education and Training of Women.....	59
4.6.2 Review Laws to Address the Factors Affecting Women in Agriculture.....	61
4.6.3 Advocacy and Community Conversation on Women's Land Rights.....	61

4.6.4 Equality in Decision Making.....	62
4.6.5 Access to Labour, Technology and Extension Services.....	63
4.6.6. Access to Farm Inputs and Credit.....	63
4.6.7 Capacity Enhancement on Gender Equality amongst Stakeholders.....	64
5.0 CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	65
5.1 Introduction	65
5.2 Summary of Findings.....	65
5.2.1 Socio-Cultural factors that make Women’s participation in Agriculture less valued	65
5.2.2 Socio-Cultural and Economic construction of roles and activities in Agriculture.....	65
5.3 Conclusion.....	67
5.4 Recommendations	69
5.5 Areas for Further Research.....	71
REFERENCES.....	72
APPENDIX I: CONSENT SEEKING FORM	82
APPENDIX II: QUESTIONNAIRE ON THE INVISIBILITY OF KENYAN WOMEN IN AGRICULTURE	83
APPENDIX 1V: MAP OF KENYA INDICATING THE LOCATION OF HOMA-BAY COUNTY	100

LIST OF TABLES

Table 4.1 Distribution of respondents by age.....	45
Table 4. 2 Distribution by education Level of respondents	47
Table 4.4: Distribution of respondents on how education, decision making and family size influence women’s participation in agriculture.....	53
Table 4.5 The influence of access to farm inputs on women participation in agriculture...55	55
Table 4.6 Access to any extension services in 2013.....	56
Table 4.7 Socio-economic factors undermining the role of women in agriculture.....	59
Table 4.8 Importance of women’s opinion sought in agricultural production and marketing Activities	59

LIST OF FIGURES

Fig 2.1: Conceptual model	34
Figure 3.1: Map of Karachuonyo Constituency	37
Figure 4.1 Gender Distribution of study respondents.....	46
Figure 4.2: Marital status of respondents... ..	46
Figure 4.3 Distribution of respondents by specialized training in agriculture... ..	48
Figure 4.4: Map of Kenya indicating the location of Homa Bay County.....	100

LIST OF ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immuno-deficiency Syndrome
FAO	Food and Agricultural Organization
GAD	Gender and Development
GOK	Government of Kenya
GDP	Gross Domestic Product
HH	Household Head
HIV	Human Immunodeficiency Virus
IEBC	Independent Electoral and Boundaries Commission
IFAD	International Fund for International Development
KNBS	Kenya National Bureau of Statistics
MDGs	Millennium Development Goals
NGO	Non-Governmental Organization
OECD	Organization for Economic Co-operation and Development
SPSS	Statistical Package for the Social Sciences
SOFA	State of Food and Agriculture
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United State Agency for International Development
WLSA	Women and Law in South Africa

ABSTRACT

Women play a very important role in Agriculture in Kenya however, they are accorded little attention. Inefficient information on the level of women's participation in agriculture has shaped their under-estimation in agricultural economy and hence neglect in policy issues. The main objective of this study was to explore the "invisible role" of Kenyan women in agricultural production. The study also sought to identify and analyze the socio-cultural and economic factors that contribute to the invisibility of women in agriculture.

The research adopted cross-sectional research design. Descriptive method was used for the study to describe the relationship between factors influencing the participation of women in agricultural production. The research utilized both quantitative and qualitative methods to collect data. The quantitative data was analyzed through the SPSS while qualitative data was analyzed thematically along the line of specific objectives.

The study revealed that socio-cultural and economic factors significantly influence agricultural productivity and visibility of women in Agriculture. The organization of household labour was seen to be gendered and based on existing hierarchies or established power structures within the family system. The study revealed that women are generally present on the first stages of the agricultural value chain (land preparation, sowing, weeding and harvesting) but they do not directly benefit from the agricultural product. The decision on sale of agricultural products solely lies with the men as heads of households.

Further, the study has revealed that women's limited access to agricultural production resources such as land, credit and farm inputs contribute to low agricultural production. Land is usually required as collateral (security) for credit but women are not usually the registered owners of the land they farm. Many women cannot enter into contracts such as credit agreements in their own right but through their spouses. The high illiteracy level and limited agricultural information was seen to have a significant influence on the low agricultural production amongst women in the study village. Fewer wage income amongst women especially in joint, informal and private sector contribute to male dominance in agricultural production.

Further, women's perception and low decision making level also played significant role in undermining women's participation in agriculture. The study revealed that important decisions such as application of farm inputs, use of credit and sale of agricultural products remains the men's domain.

The study recommends that in order to improve women's visibility in agriculture, the perceptions and attitudes of individuals should be changed to enable them appreciate their cultures while at the same time recognize the importance of the role women can play in agricultural production.

Legal rights are difficult to enforce if they are not seen as legitimate; thus recognizing customary land rights and working with community leaders is essential to ensure that women's rights are protected.

1.0 CHAPTER ONE: BACKGROUND TO THE STUDY

1.1 Introduction

Agriculture is central to the livelihoods of the rural poor and in the attainment of the Millennium Development Goals (MDGs). Agriculture can be the engine of growth and is necessary for reducing poverty and food insecurity, particularly in sub-Saharan Africa (IFAD, 2000:7; World Bank, 2007:127). In Kenya, the agricultural sector is one of the main drivers of economic growth, contributing nearly a fourth of the country's gross domestic product and employing close to eighty percent of the rural population (GoK, 2010). The role of agriculture in the overall economic development of Kenya and indeed sub-Saharan Africa therefore, cannot be over-emphasized. The country's socio-economic and political development is heavily dependent on agriculture. Agricultural growth is indeed a catalyst for growth in other sectors through back-ward forward linkages. It is on this backdrop that agriculture has been recognized as one of the pillars necessary to support economic recovery in our Vision 2030 Blue Print. The reforms in agricultural practices to boost production are, therefore, central to economic progress in many of the African countries.

In the wider sub-Saharan Africa, one-third of the population, almost 200 million people, are faced with food insecurity. One-half of the population lives in extreme poverty, on less than one dollar per day. Seventy percent live in the rural areas and depend on agriculture, which accounts for 30% of the region's GDP. The situation is made worse by the fact that our region continues to report a drop in agricultural productivity compared to other regions of the world such as Asia

and Latin America (MDG, 2013:17). The international development community has recognized that agriculture is an engine of growth and poverty reduction in countries where it is the main occupation of the poor and thus forms the backbone in development (World Bank, 2009:13).

In Africa, the involvement of women in agricultural development is defined by the gender division of labour which varies from one society and culture to another. Within each culture external circumstances influence the level of activity (Nigist, 2004:11). This explains why the agricultural sector in many developing countries is underperforming. Women, who represent a crucial resource in agriculture and the rural economy through their roles as farmers, labourers and entrepreneurs, almost in all societies are not yet recognized as important actors in agricultural development and even face more severe constraints than men (SOFA and Cheryl Doss, 2011:3).

Various studies (Fabiya et al., 2007:696; Onguono, 2009:69; FAO, 2008:58; Karki, 2009:24) have shown that women have historically used agriculture as one of the strategies to address poverty, improve livelihoods and also to maintain the stability and sustainability of their families. Rural development in Africa cannot be imagined without the active participation of women who form an integral part of farming households. They are involved in over half of the farm activities in many developing countries, bear most of responsibilities for household food security and contribute to household well-being through their income generating activities (Etenesh, 2005:1). This is more evident in developing countries such as Nigeria, South Africa, Ghana, and Kenya among others. (Manuh, 1998). Karki (2009:24) asserts that rural women alone are responsible for up to 50 percent of the world's food production and they also contribute about 60 to 80 percent of the production in many developing countries. Fabiya *et al.*, (2007:23) state that female farmers

have played an important role in food production and food security. Women constitute more than half of the agricultural labour; 70 percent of agricultural workers, 80 percent in food production and take up to 60 to 80 percent of marketing (Fabiya *et al.*, 2007:196; Kehler, 2001:36).

In order to improve the capacity of African countries to meet their food demand, women's roles have to be recognized and they should be given equitable access to and control over the land, credit facilities, extension services and improved tools as well as membership in cooperatives and other rural benefits. They should be given their share over all the properties (Winrock, 2001:5). Indeed development will remain an illusion so long as we continue to ignore women who represent the major force for rural changes, largely as an un-tapped resource that could boost rural development and lead to higher growth rates and increased food production (Nigist, 2004:1).

In recognition of the foregoing, many governments and non-governmental organizations are trying to help women get recognition from society which they are part of. What is more surprising is that most women themselves do not realize that they are prevented from owning what they deserve, recognition and appreciation of their contribution in agricultural economy (Overholt, 1991:4). Understanding the dynamic processes of change therefore, is crucial to better positioning of the sector for faster growth and sustained development, which is vital for food and livelihoods security for millions of men and women worldwide.

Although a number of studies have been done regarding the contribution of women in agricultural production, controversies arise in quantifying their contribution. FAO (1997:3) indicate that women produce between 60 and 80 percent of the food in most developing countries and are

responsible for half of the world food production, a sentiment supported by Dommati et al., (2011:115).

On the contrary, another group of researchers argue that despite their significant role in agricultural production, a precise measure of women's contribution to food production is impossible to establish. Women do not produce food separately from men and it is impossible to disaggregate men and women contribution either in terms of labour supplied or in terms of output produced. This research paper therefore, aimed at contributing to the gender debate in agriculture by assessing the role of Kenyan women in Agriculture and the factors that hinder their full recognition and participation in agricultural development.

1.2 STATEMENT OF THE PROBLEM

Women are the most important actors in the food chain which begins from farm production, market and intra household distribution of food. They play a lead role in post-harvest activities such as shelling of grains, storage, processing and marketing. They are also becoming increasingly visible in farm tasks which traditionally have been designated as male preserves, thus breaking ground in typical male dominated areas such as land clearance and growth of cash crops. Women therefore, remain the center piece of food security and hold the key to a sound and healthy economy. However, despite the central role of women in the economic development of the country, they have much more limited access to resources than their male counterparts especially in the areas of education, land, agricultural extension and access to credit (Akua, 2010:146).

Women continue to face major socio-cultural challenges and thus their contribution in agricultural development often remains invisible and relatively low compared to their potential. Kabane (2010:3) asserts that tradition and cultural norms are the major challenges that limit the access of women to agricultural input, thereby leading to the invisibility of women in agricultural development. In terms of ownership of property, particularly land, the women of this country have no equal rights compared to their male counterparts. In addition, the dominance of men in various income generating activities highly affects the economic empowerment of women. Lack of awareness in our society, has also contributed to women's role not being recognized. Lynda (1991) noted that we live in a society in which there is substantial level of gender inequality. The inequality in the provision of education reflects the deep rooted tradition and values within the ideological, political, economic and socio-cultural structure of societies (Kasente, 2003:50). All these combine to restrain women's ability to increase their agricultural productivity and income and therefore, women farmers remain generally invisible and voiceless; their contribution to agricultural production, livelihood and food security notwithstanding.

Studies done in the subject area (Linda, 1991:1; Fabiyi et al., 2007:196) have focused mainly on invisibility of women in agricultural production and have failed to determine the factors that make women invisible in agricultural production.

The current study therefore, was intended to fill this gap by collating the empirical evidence on the participation and the role of women in agriculture and further sought to list the resources and facilities that should be availed to women farmers. The study also established the interrelationships among factors that undermine Kenyan women as actors in agricultural production.

The study was guided by the following research questions:

- What are the socio-cultural and economic factors militating against the visibility of women's participation and contribution to agriculture in Karachuonyo?
- How does socio-cultural and economic definition of women and men's roles and activities in agricultural production enhance male dominance and insubordination in agriculture in Karachuonyo?
- What mechanisms and policy recommendations can be prescribed in order to address the socio-cultural and economic constraints that makes women's participation in agriculture obscure?

1.3 OBJECTIVES OF THE STUDY

13.1 Overall Objective

To explore the "invisible role" of Kenyan women in agricultural production

1.3.2 Specific objectives

Specifically the study set out to:

- Identify the socio-cultural and economic factors that make women's participation in agriculture in Karachuonyo less valued and invisible;
- Analyze how socio-cultural and economic construction of women and men's roles and activities in agriculture enhance male dominance while perpetuating female insubordination in agriculture;
- Explore mechanisms of addressing the socio-cultural and economic constraints that makes women's participation invisible with a view to enhancing their performance in agriculture

1.4 JUSTIFICATION OF THE STUDY

Azahari (2008:2) reveals that, there is evidence indicating that the elimination of barriers to women's access to productive resources can lead to the productive participation of women in agricultural development and women can earn recognition as important players in the development process.

The study provides very important contribution to the wide range of materials that is now rightfully seen as gender studies. It will encourage the government and NGO's to focus their programmes on rural development and promote women independence in agriculture.

The study results has the potential of increasing the understanding and generating social awareness of gender issues in agriculture specifically the critical contribution made by women in society and rural development.

The study results if well taken into account will draw the attention of policy makers, planners and economists so that they can appreciate and recognize women's economic contributions in formulating national policies, strategies and budgets. The study may also assist community members, development experts, policy makers and other stakeholders concerned in coming up with ways of dealing with the women's issues identified.

Furthermore, the study provides a deeper knowledge and background of the reasons behind economic limitations in rural areas for all the stakeholders.

1.5 SCOPE AND LIMITATIONS OF THE STUDY

The research was limited to farming households in Karachuonyo constituency. The researcher chose this group of people because as active farmers in the study area, they understood well the predicament of female farmers in the community. The study specifically explored the socio-cultural factors affecting the participation of women in agricultural production in Karachuonyo constituency. These are the factors that seem to have major effect on agricultural development in the study area.

Gaining entry and earning the confidence of the people in the study village proved difficult. The researcher was a visitor in the village. Consequently, it took time to establish a rapport with the informants. A considerable amount of time was spent interacting and learning about the villagers who would be willing to participate as informants.

Some of the villagers in the study village were old and this posed a challenge. First, majority of them were inactive in agriculture and thus were not familiar with contemporary factors affecting women in agriculture. Secondly, the information they provided was based on their memory of agricultural practices. The result was that the researcher had to spend a great amount of time waiting for them to recall some of the information and this required a lot of perseverance.

Another challenge occurred during the data collection. Most of the women, especially the aged, were illiterate. The mere fact that the researcher was educated intimidated many of the elders and made them uncomfortable. Consequently, they were reluctant to answer questions. However, the researcher reminded her informants that the research was merely for academic purposes and to

learn about the factors affecting women in agriculture, the villagers were much more at ease and began to discuss the issues more openly.

The research was conducted at a time when informants were constantly occupied with their household chores which made it difficult for the informants to sit down and answer questions. The researcher had to organize evening interview sessions with some of the informants who had the interest. Some informants were not interested in answering questions especially young women. They preferred to participate in a gainful pastime. The fact that the researcher was a student and could not give them what they expected was a setback in the data collection process. However others were willing to participate without remuneration.

1.6 DEFINITION OF KEY TERMS

1.6.1 Agriculture

Agriculture is the science, art and occupation of cultivating the soil, producing crops and raising livestock. It is the very basis of civilization. It is the food we eat, the clothing we wear, the material of our homes, the gardens around us, and many of our traditions and values. The term also includes the financing, processing, marketing, and distribution of agricultural products; farm production supply and service industries; health, nutrition and food consumption; the use and conservation of land and water resources; development and maintenance of recreational resources; and related economic, sociological, political, environmental and cultural characteristics of the food and fiber system. The term also includes the financing, processing, marketing, and distribution of agricultural products; farm production supply and service industries; health, nutrition and food consumption; the use and conservation of land and water resources; development and maintenance

of recreational resources; and related economic, sociological, political, environmental and cultural characteristics of the food and fiber system.

1.6.2 Gender

Gender is defined by FAO as 'the relations between men and women, both perceptual and material. Gender is not determined biologically, as a result of sexual characteristics of either women or men, but is constructed socially. It is a central organizing principle of societies, and often governs the processes of production and reproduction, consumption and distribution' (FAO, 1997).

1.7 ASSUMPTIONS OF THE STUDY

The assumptions of this study were:

- The gender roles differentiation in agriculture is structurally and culturally defined in ways which create and reinforce relationships of male dominance and female subordination.
- Women's role in agricultural production in Karachuonyo constituency is invisible owing to the socio-cultural factors.
- Addressing the socio-cultural barriers that limits women's participation in agriculture will enhance women's performance in agricultural production.

2.0 CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section contains a review of literature relevant to the study topic and in line with the specific objectives. The literature scrutinized the position of women in agriculture, the gender differences in roles and activities in agriculture, challenges facing women in agriculture and its allied sectors and how to bridge the existing gaps with a view of improving their role, participation and

performance in the agricultural economy. It further looked at the theoretical and conceptual frameworks underpinning the study.

2.2 The Position and the Role of Women in Agricultural Production

In most societies, men's roles in agricultural activities are understood, direct and clear. However, women's role in agriculture is not clearly recognized. Hence a clear picture of women's participation in agriculture is necessary. Mehta and Jarial (2012:2) asserts that the word 'farmer' is perceived as addressing a man and seldom a woman and this is even reflected in the policies and national agenda of many countries and thus women continue to remain 'invisible' farmers. The face of an Indian farmer therefore, remains a man's face. Planners, extension staff and decision-makers still do not perceive women to be farmers, though investigations conducted in selected states in India show that more than 60% of agricultural operations are performed by women, the fact that they are more women farmers is simply not reflected in any government record or programme. This situation is enhanced by the fact that these professionals are often male and they do not adequately recognize the agricultural work of women. FAO (2011b:3) asserts that, men are less familiar with the specific needs and priorities of women, and might encounter difficulties in targeting them because of specific socio-cultural norms. Policies and programmes frequently overlook the women as farmers.

Action Aid (2012:16) indicates that women constitute the majority farmers in most countries yet almost all agricultural policies assume farmers are men, and rural women's voices seldom influence policy or budget decisions. The paper describes as a scandal that woman farmers have been virtually ignored and discriminated against by governments and donors. Despite producing

up to 80 per cent of food in Africa, women own only 1 per cent of the land in Africa; receive only 7 per cent of extension services and 1 per cent of all agricultural credit. Women farm either within male-headed households or as heads of household themselves. In the conclusion, the paper acknowledges the role women play in agriculture and suggests that agriculture should be feminized.

Women play important roles to help their families and communities meet their food demands. But the most surprising thing is that the community has not significantly understood the effort that they exert in the last several years. Women are involved in agricultural and rural development representing more than half of the labor required to produce food consumed in developing countries (Etenesh, 2005:49). One problem here is reaching at common understanding as to how female farmers are perceived in society. Observations indicate that a female farmer is commonly perceived as a co-farmer and as marginal players in agricultural development particularly by those individuals with significant influence; research, extension and development practitioners (Tsehai, 1991:89).

Women are often farming without benefits of the improved inputs and services required for more productive and remunerative agriculture. The paradox is most obvious in the African setting where it is estimated that female do 60-80% of all agricultural work. Yet some females are rarely systematically targeted for training, extension, research technology or improved access to resources. To increase productivity in the agricultural sector, there is need to better direct some of these opportunities to the female population for growth to be achieved (Overholt, 1991).

Rural women are the most marginalized group in terms of their needs, while being the people who produce almost 80 percent of the food consumed in most of Africa's rural areas. Moser (1993:11) echoes the sentiment when she says that women are "an untapped resource that provides an economic contribution to development", and that "development processes would precede much better if women are fully incorporated, instead of being left to use their time unproductively". For this reason, rural women should be involved in on-going development initiatives which will enrich their lives.

2.3 Gender Differences in Roles and Activities in Agricultural Production

According to Collette (1991:1), women's role and responsibilities in terms of content and context have important implications for their status and position in society. In Kenya, the organization of household labour is gendered and based on existing hierarchies or established power structures within the family system. Gender role differentiation is also structurally and culturally defined in ways which create and reinforce relationships of male dominance and female subordination. Ideas about what patterns of behaviour and activities are appropriate or inappropriate for women and men are largely social and cultural in origin and they are acquired through the socialization into different roles on the basis of sex. In the course of socialization process, already existing stereotypes about women are reinforced and there is a strong cultural emphasis on sex-appropriate behaviour used as a basis of determining future occupation status of men and women. Guided by patriarchal principles, women in Karachuonyo are expected, and encouraged, to exhibit those behaviors' which portray them as submissive, supportive, emotionally warm, nurturing, subordinate and docile (Onam *et al.*, 2010:601).

Kenyan women have played a traditional role of motherhood and home makers in both rural and urban areas. However, their work has never been limited to the household and the family. The women are actively involved in all aspects of their social life. Women are producers, procreators and active participants in the social and cultural activities of the community. However, the important roles they play have not always been recognized, their participation in the economy has not been valued for a long time and they have not received their share of the nation's wealth. Without equal opportunities, they have lagged behind men in all fields of self-advancement.

Women's productivity is predominated in the processing and marketing of food, rearing, food processing and industries. In rural areas, women are engaged in a wide variety of economic activities including the construction of houses, land cultivation and harvesting, and food storage (Amarech, 2004:13). However, women's work in the agricultural sector has often been erroneously documented as marginal and they have been considered more as consumer than producers. Women have secondary status within the family and in the society, which is why they get little credit for their productivity. Hence, women continue to be regarded as an appendage to the family and as consumer but not as producers. It is important to understand how conditions of women have changed and the need for the country to mobilize the labor of women to optimize human resource in the overall economic development of the nation.

Many women in developing countries have a direct contact with the natural environment as they collect essential items for everyday needs. There are also women consumers or purchasers whose link with the environment is less direct, but the action can have a bearing in the future (Rahmeto, 1989:13). Though, it is understood that women have triple roles in the society, their productive

role has not been recognized. Women receive no remuneration for their labor, no monetary or material gains and no benefit in luxury time even to improve their living conditions (Mokonen, 1996:15). The point is not that women should place themselves above the need of their family, or that their need and wants are similar to those of urban women with higher income. Rural women spend their time in productive activities, which directly benefits their families and society in economic terms. There should be some terms for their productive services and of providing incentives for them to produce efficiently and use their energies meaningfully.

Roshan and Khurana (2011:19) pointed out another factor that needs to be taken into account. Certain tasks, activities or enterprises may be regarded as male or female. For example, women typically gather forest products for fuel, food for the family, fodder for livestock and medicinal uses. Men more often cut wood to sell or use as building materials. In order to secure sustainable and equitable management of forest resources, therefore, both women and men need to be consulted in the design and implementation of forestry projects. Similarly, where livestock is concerned, women and men often own different animal species and use different animal products. Policies or programmes should target the needs of both men and women. It is therefore, important to include women on both the planning process of the different organizational institutions so as to safeguard the alarming rate of environmental degradation.

Assigning contributions to agricultural outputs by gender is also problematic because in most agricultural households, both men and women are involved in crop production. Researchers have occasionally used this approach where there are distinguishable cropping patterns by gender (Hoddinott and Haddad, 1995:3; Duflo and Udry, 2001). A careful analysis of agricultural practice

shows that while there are gendered patterns of cropping, the distinctions between men's and women's crops do not hold up well enough to use them to make inferences about men's and women's relative contribution to production. In addition, gendered patterns of cropping may change over time.

2.4 The Socio-cultural factors limiting women's participation in Agricultural Production

2.4.1 Women's Land Rights and Customary Systems

According to Action Aid (2011:19); Bikaako and Ssenkumba (2003: 247), for women farmers access to land and having control over their land is essential for basic livelihood, more economic independence and a way out of poverty. However, in many communities, access to land is governed by both statutory and customary laws. Customary laws emerge from unwritten social rules derived from shared community values and traditions. Customary laws limit women's rights on land to secondary level, mainly derived from patriarchal households. This law underpins patriarchal system of traditional authority to reinforce patriarchal values which disadvantage women and place them to subordinate role in the society (WLSA, 2001:49).

Marriage has been a primary means of getting access to land under customary system of tenure in sub-Saharan Africa. Unmarried women have little access to land because, they are not allowed to inherit properties in most patrilineal societies while wives have better access to their husbands' land through marriage, thus security of marriage becomes major requirement for security of tenure (Davison, 1988:19). On the other hand, studies have revealed that marriage as an institution and family structures are becoming more and more unstable especially by impacts of HIV/AIDS in Sub-Saharan Africa (Nzioki, 2002:94).

Some customary laws give sons exclusive right to inherit land and other properties whereas wives and unmarried daughters have the right to be supported. Pre-existing customary norms in some matrilineal societies in Africa used to allow widows continued lifetime rights on their marital land which passes on to male heirs after their death (Davison, 1988:17; Nzioki, 2002:94). But, this practice is not necessarily adhered to as land gained value. Widows are becoming vulnerable, and sometimes forced off their deceased husbands' land by their in laws or by their own sons. Customary laws generally sanction male authority over women, (community customs and traditions support land allocation to the males). Under customary laws, all property acquired by the spouses except personal goods, belong to the husband.

FAO asserts that many countries have extended formal legal rights to women over land inheritance and ownership. However, customary practices and the inability of many women to assert their legal rights means those formal legal provisions are often not followed. Traditions remain stronger than law when it comes to land issues. Opposition from land reform authorities, peasant unions, village authorities and male household heads can frustrate land reform efforts to extend legal land rights to both single and married women.

According to Manuh (1998:9) and Action Aid (2011), women farmers often get the poorest land, infertile, dry and far from water sources, or small pieces of land some distance apart. Drought and other damages to the environment caused by climate change can make it impossible to grow the food their families need to survive. Smallholder farmers are mostly women growing crops to feed

their families (subsistence or “high-risk low-yield” farming). Commercial farmers who produce crops for sale are mostly men. Only commercial farmers are regarded as “economically active”.

The Kenya’s new constitution mentions that “every person” is entitled to own property and equitable access to land. However, the constitution fails to mention the rights for women and does not acknowledge the gender discrimination of land rights in the past. According to a report entitled ‘The National Land Policy: Critical Gender Issues and Policy Statement’, only five percent of women in Kenya own land (Mbatiah, 2010; Wanyeki, 2003:150).

FAO (2009) agrees with the sentiment that women be allowed to access land either directly or indirectly, as the majority have limited or no access to or control over land. In some African countries, women are rarely allocated land in their own right, particularly in patrilineal communities. Land is allocated to men, who are the heads of household. Women in matrilineal societies on the other hand are allocated land in their own right, but the land is still commonly controlled by their husbands or male clan heads (FAO, 2009). In the study village, men are the ones who have full ownership of property and any valuable goods in the household must belong to the head of the household. This, of course, is in line with their culture.

According to Luo culture, a woman is not in a position, or rather, is not entitled to own any kind of valuable property such as land. This has been the culture for many generations and, apparently, still exists in the villages. Consequently, women in the village do not feel that it is their right to own land personally, as their mothers did not do so. They are not even aware of such things as owning properties. However, they are allowed to access the land but they do not have control over

it. As society continues to position men as sole owners of property, it is clear that these customs and practices hold Kenyan women back and hinders their total economic development (Mbatiah, 2010).

2.4.2 Farm Inputs

Better seeds, farm tools and equipment, manure and sustainable alternatives to fertilizers and pesticides will enable women farmers to farm sustainably, be more productive, and achieve food security. However, it is often very difficult for poor women farmers to get what they need to improve their farming. As smallholder farmers, they are not regarded as “economically active” and are excluded from membership of farmer Groups and cooperatives. As a result, they lose out on Inputs available to members such as seeds, tools, and services (Seshu and Malavika, 1989).

Most women farmers do not own even simple farm tools like hoes or harrows. Many women farmers know traditional ways of preserving seeds and other genetic material of plants to produce the next crop. They are told that new genetically modified seeds will produce much better crops but then they will be forced to buy expensive new seeds every season.

Most women farmers do not have access to expensive equipment such as ploughs and tractors. Seeds, fertilizer and other inputs are usually packed and sold in big quantities suitable for commercial farms (FAO, 1994). Most farmers lack information on the right type of farm inputs to use and the appropriate time of application of the same. The cost of key inputs such as seed, pesticides, fertilizer, drugs and vaccines is high for resource-poor farmers. Most farmers therefore, do not use them. This greatly reduces the yield that the farmers get (Caleb and Kibet, 2011).

Most women farmers cannot afford to buy the inputs they need and it is difficult for them to get loans. Women are not the recognized owners of the land they farm and most credit providers want land as collateral for loans. Government schemes to provide (subsidized) inputs often do not target or benefit women as much as they should. Poor infrastructure makes it difficult to get input (Action Aid, 2011).

2.4.3 Unsuitable or Lack of Extension Services and Training

According to Lucy (2003), extension services provide advice and training to enable farmers to use new inputs and methods to farm more productively. Technological developments and the impacts of climate change are making extension services ever more important. Women farmers especially smallholders have a lot of challenges that hinders them from accessing extension services and training.

Extension services are mostly designed for commercial farmers who grow cash crops but most women farmers are smallholders who grow subsistence food crops. Almost all extension workers are men and few have been trained to provide the services and information that women smallholder farmers need. Few women have been trained as extension workers. Extension service providers usually expect women to go to where they are, but there may be social, cultural or religious taboos against doing so (Action Aid, 2010).

According to USAID (2005), Women farmers already have too many demands on their time: they work a triple shift (farming, domestic work and family care). They have little time for extension services and training. Most women farmers cannot afford to pay for extension services.

("Structural Adjustment Programs" require payment for services that in the past were free to farmers).

According to Caleb and Kibet (2011), the agricultural sector extension service plays a key role in disseminating knowledge, technologies and agricultural information, and in linking farmers with other actors in the economy. The extension service is one of the critical change agents required in transforming subsistence farming to a modern and commercial agriculture to promote household food security, improve income and reduce poverty. However, there is limited access to extension services in most parts of the country with the National extension staff: farmer ratio standing at 1:1,500. This situation has hindered most farmers from keeping pace with changing technological advances. There is therefore, need for recruitment of more extension staff and the involvement of NGOs to increase access of extension services to farmers.

2.4.4 Access to credit and Finance

Loan, finance and credit are essential so that women smallholder farmers can pay for inputs to improve farming and develop small business enterprises to empower themselves economically. Women smallholder farmers are often not regarded as "real farmers" and that makes it very difficult for them to get loans/credit for farming. There are few banks or micro-credit schemes in rural areas and not enough information about credit available, how to apply, and repayment terms. Applying for credit can be a difficult and confusing process, especially for those who are illiterate. Interest rates are high. Land is usually required as collateral (security) for credit but women are not usually the registered owners of the land they farm. Many women cannot enter into contracts such as credit agreements in their own right. (The woman's husband or other male family member

has to give permission or even sign on her behalf). Without access to credit, it is very difficult for women subsistence farmers to develop small business enterprises and empower themselves economically. Those who get loans from unregulated money-lenders can end up hopelessly in debt and lose everything.

The problem of women's access to micro-credit is lack of awareness and importance of women's productivity role both for national economic and women's right. Women are better managers and serve to increase their income and to escape from poverty when they get credit support and micro-finance facilities (Lindia, 2005; Action Aid 2011). Many credit associations and export crop market cooperatives limit membership to household heads in many African countries, thereby excluding married and single women (Manuh, 1998:13). Women face greater difficulties than men, particularly with regard to participation in rural cooperatives and access to credit, training and agricultural extension.

These difficulties rarely flow from explicitly discriminatory norms, as legislation on these issues is in most cases gender neutral. Rather, they mainly arise from cultural practices and stereotypes (e.g. on women's role within the family and on interactions between persons of different sexes) and from socio-economic factors (e.g. as for access to credit, women's higher illiteracy rates, lack of information about available credit programmes, lack of land titles to be offered as collateral, more limited access to formal employment, and exclusion from credit cooperatives (FAO, 2005:3). Onguono (2010:5) notes that women do not have access to resources such as finance for the execution of planned projects like their male contemporaries. In some communities, women are encouraged only to produce food crops for sustaining the family, leaving men in control of the production of cash crops.

According to Linda (2005), micro-finance and credit support are part of an integrated program for poverty reduction for the poorest people, creation of accessibility for credit and micro-finance is an entry point for women's economic, social and political empowering. On the other hand, because of their illiteracy, absence of business management capacity, lack of exposure to information about the importance of credit and micro-finance for income generation, lack of confidence and fear to risk taking to borrow loan etc., affect the economic empowering of rural women.

Appropriate training on the proper management and dissemination of information about importance of credit and micro-finance for empowering and income generation to poor rural women has to be undertaken by development agencies and government to ensure poverty reduction. It is recognized that one of the most promising means for women empowerment is supporting women to have their own sources of income. However, many constrains prevent women's involvement in the male-dominated world of business and commerce. These range from dominance that creates pressure on women to loss of economic independence and confidence.

2.4.5 Agricultural Research and Technology

Research is essential to develop better crop varieties, methods and technology for sustainable farming in this time of climate change. Most research focuses on commercial crops and farming methods that require heavy machinery and highly skilled labor. There is little funding for research on the staple food crops grown by women, especially the indigenous crops. Most research ignores the women farmers' need for appropriate technology to save them time and labor. Most research ignores women's knowledge of traditional farming methods, indigenous crops, biological diversity and plant resources. There is no data on use of farming inputs and new technology by women.

Women sometimes lose their land rights when new technology (such as advanced irrigation) makes the land more valuable (Action Aid, 2010).

2.4.6 Market Services

Access to markets, reliable information about markets, and competitive pricing are essential for economic empowerment of women. Most smallholder farmers keep on producing the same product, and take it to the same market at the same time. But if there is too much of the same product on sale, or if it is not a product that people want, or if competitors can sell more cheaply, prices will go down and farmers will get a low return for their labor. Difficulties that women smallholder farmers face include: lack of information about markets, poor roads and transport in rural areas, high cost of trading licenses, middlemen who take the lion's share of profits and officials who demand bribes, they lack facilities and skills to add value to their produce and do not belong to marketing cooperatives that could help them negotiate better prices (Action aid, 2011).

2.4.7 Education

Education is one of the significant factors affecting the participation of women in agricultural development. Rad et al., (2010:5) agree that education is one of the important factors that help development to be realized. The purpose of education (formal and informal) as stated by Rad et al., (2010:3) is to communicate accumulated wisdom and knowledge from one generation to the next.

Secondly, education enhances active participation in innovation and the development of new knowledge. Ani et al., (2004:6) further argue that education enhances the ability to derive, decode and evaluate useful information for agricultural production. The Food and Agricultural

Organization/United Nations Educational, Scientific and Cultural Organization [FAO/UNESCO] (2002:12) note that better education and training have become essential for sustainable development and for rural economies to survive. A study conducted by the Natural Resources Management and Environment Department (2010:1), reveals that, illiteracy is a major constraint facing women in development.

Women are unable to understand and utilize technical information because they lack basic formal education. This department also reveals that, because of their illiteracy, women farmers are unable to read and understand the written material provided by extension programs that educate farmers. Penin (1999:12) supports the latter sentiment by arguing that, education has a relationship with farming progressiveness. The reason is that there is a positive correlation between education and farming.

In addition, as noted by Anselm *et al.*, (2010:128), education plays a significant role in positively influencing the status of women in farm decision-making. He states that highly educated women are likely to make a higher contribution to farm decision making than uneducated ones. A study conducted by Ani *et al.*, (2004:13) on the relationship between socio-economic characteristics of rural women farmers and their adoption of technology showed that educated women farmers adopts farm technologies at a higher rate than less educated people who continue to use more rudimentary technology. Therefore, education of rural women is important for their progressive participation in sustainable development. Ravinder *et al.*, (2009:52) note that socio-cultural factors also play a role in hindering women from accessing and furthering their educational interests. They

argue that, factors such as early marriage place a greater burden on household labour and acts as a barrier to girls' progress in education.

A study conducted by Gundu (2009:130) reveals that one of the major factors that affect women in farming is illiteracy. It was argued that this constrains one's access to needed farming information. Gundu further argues that even though there may be available reading materials for farmers who want to improve themselves, women in the village are ultimately limited by their illiteracy. Gundu noted that illiteracy among respondents seriously inhibited their ability to access and use agricultural information to achieve and sustain household food security. She further notes that the illiteracy situation limits women's capacities to access agricultural training, credit, participation in economic activities and also access to information from other relevant organizations, not to mention the post-harvest and surplus management offered. She adds that the lack of education also affects the reception of services such as extension, as generally, adaptation and diffusion of innovations is often slow among the less literate populations in society.

From the literature reviewed, several barriers affecting women's participation in agricultural activities have been identified. Even though there are laws and policies which enable women to freely access credit facilities and benefits in Kenya, in most rural settings, these women are not making use of such resources. As the literature suggests, women are inhibited from practicing activities they desire and their rights are denied by the social norms and customs of their societies. Systemic gender based biases are one of the major issues limiting women in engaging and accessing agriculture related resources.

2.5 Overcoming socio-cultural constraints that limit women's participation in agriculture

According to FAO (2011a:18), carefully designed policies, strategies and projects can work within existing cultural norms, through the public and private sectors, in ways that benefit both men and women. Specific recommendations for closing the gender gap include; access to land, markets, technology, extension, and financial services.

Legal rights are difficult to enforce if they are not seen as legitimate; thus recognizing customary land rights and working with community leaders is essential to ensure that women's rights are protected. Strengthening traditional use-rights for widows and divorced women may provide more secure tenure for them even in cases where there is resistance to full ownership. Relevant training is also required for staff in the various institutions that carry out and enforce land rights, including land registries, cadastral offices, titling agencies, land magistrates and courts. Gender-balanced employment in these institutions can also help. Where appropriate, officials' performance should be evaluated against gender-related targets (Ikdhahl, 2008).

The involvement of women's organizations in the process can facilitate the achievement of gender equity targets. Furthermore, gender targets for access and tenure security should be monitored and officials held accountable for meeting them. Raising women's legal literacy, increasing the dissemination and accessibility of information and establishing supporting legal services are essential in promoting gender equity in land programmes. Legal literacy means that women are aware of their legal rights and know how they can be enforced and protected.

Officials responsible for implementing land programmes must actively educate both men and women regarding gender equity provisions and the possibility of joint titling, rather than treating the decision as a private matter between spouses (Ik Dahl, 2008:8; Brown, 2003). Civil society organizations can be instrumental in promoting legal literacy. In Mozambique, when land legislation was integrated into literacy programmes or when non-governmental organizations (NGOs) distributed land law information repeatedly over a long time, women were more likely to know their rights to land (FAO, 2010:43).

According to Schuler *et al.* (1997), access to credit empowers women by increasing their sovereignty and decision-making within the household. Amplified autonomy may allow women to attain unrealized goals by improving their bargaining position in the household. It is generally observed that women have little control over their credit and often do not always consume their loans themselves but act as representative of male family member. Most women are willing to take up jobs to supplement their family income by participating in income generating activities. However, majority of them do not have the required skills. Access to finance at affordable rates for poor women is necessary and development agencies should begin to turn their efforts towards utilizing credit as a development tool. The credit programs also tend to help greatly in changing the attitudes of men to the role of women in the household and the community in general.

The major problems for women with respect to technologies are the choice of technologies and their access by women, rather than their availability. The reviews by Carr (1978) and the international center for research on women (Berger *et al.*, 1984), supports this conclusion. Related to this is the potential for increased productivity that is lost as a result of the lack of improvements

in this area (Moock, 1976). To address this, labour saving technological options for a broad range of activities performed by women need to be incorporated in a complete technological package. To the minimum this should include postharvest processing and storage in addition to crop production.

Greater attention to institutional and organizational needs is necessary for better identification and dissemination of suitable agricultural technologies and inputs. These should be accessible to all farmers; including women (Goodell, 1984). Women farmers have relatively difficult access to technology, partly due to their work loads. There is need for programs with special emphasis on women; for example, reaching women farmers with extension education using different techniques from those commonly used.

Financial institutions, governments and NGOs should offer financial literacy training to ensure that women can compare products and make decisions based on a clear understanding of the characteristics and conditions of the products available (Mayoux *et al.*, 2009). Such efforts could involve steps such as disseminating information and promotion materials in places or through channels that women can access with simple application procedures and adapting them to women's literacy and numeracy levels. Simplify insurance contracts and communicate their conditions using language and examples that less-literate women can easily understand.

Women remain significantly overrepresented among the illiterate. Improved access to education and better-quality education will help reduce some of the wage gap and, more importantly, allow women to diversify by widening the opportunities available to them. In countries where agriculture

is a major source of employment for women, skill building should address relevant skills and knowledge gaps and focus on extension services and vocational training (Quisumbing and Maluccio, 2003).

Lenders and other financial institutions should promote a gender sensitive culture throughout their organization (World Bank, FAO, IFAD, 2010). Women should be consulted and included in discussions, decision-making, planning and provision of services. Marketing strategies, promotion and services delivery should be gender sensitive.

2.6 Theoretical Framework

2.6.1 Gender Planning Approach

The Moser Gender Planning Framework is a tool for gender analysis in development planning. It was developed by Caroline Moser with the goal to free women from subordination and allows them to achieve equality, equity, and empowerment. She developed this framework for a gender and development (GAD) approach to development planning and further expanded it into a methodology for gender policy and planning. The framework is based on Moser's concepts of gender roles and gender needs, and her views on the ways policies should approach gender and development planning.

The Moser gender planning framework was found to be sufficient for this study. The framework emphasizes the importance of gender relations and includes quantitative empirical facts. It also investigates the reasons and processes that lead to conventions of access and control. Aspirations or needs that women strive to achieve have been classified into two categories by Moser. The

categories are practical and strategic gender needs which arise from inequalities that exist between men and women. Societies prescribe gender roles based on sex hence the condition of the people arising from the gender division of labour result into practical gender needs.

Moser (1993: 27-36) draws attention to the fact that women's 'home-maker' role is only one of multiple roles they perform. She mentions three main roles of women which she refers to as the 'triple role of women which include; women's reproductive, productive and community managing roles.

2.6.2 Relevance of the Theory to the Study

Moser's categorization is useful, in that it makes women's work visible and emphasizes the diversity of their domestic, commercial and communal responsibilities. The workload of women is often underestimated due to the tendency of considering only the salaried work to be 'real' work. Secondly, the concept of the triple role of women demonstrates the common perception of 'male breadwinner' and 'female home-maker'. Further the framework includes gender disaggregation, control of resources and decision making within the household. The framework acknowledges a political element to gender planning, and assumes that the process will have to deal with conflicts.

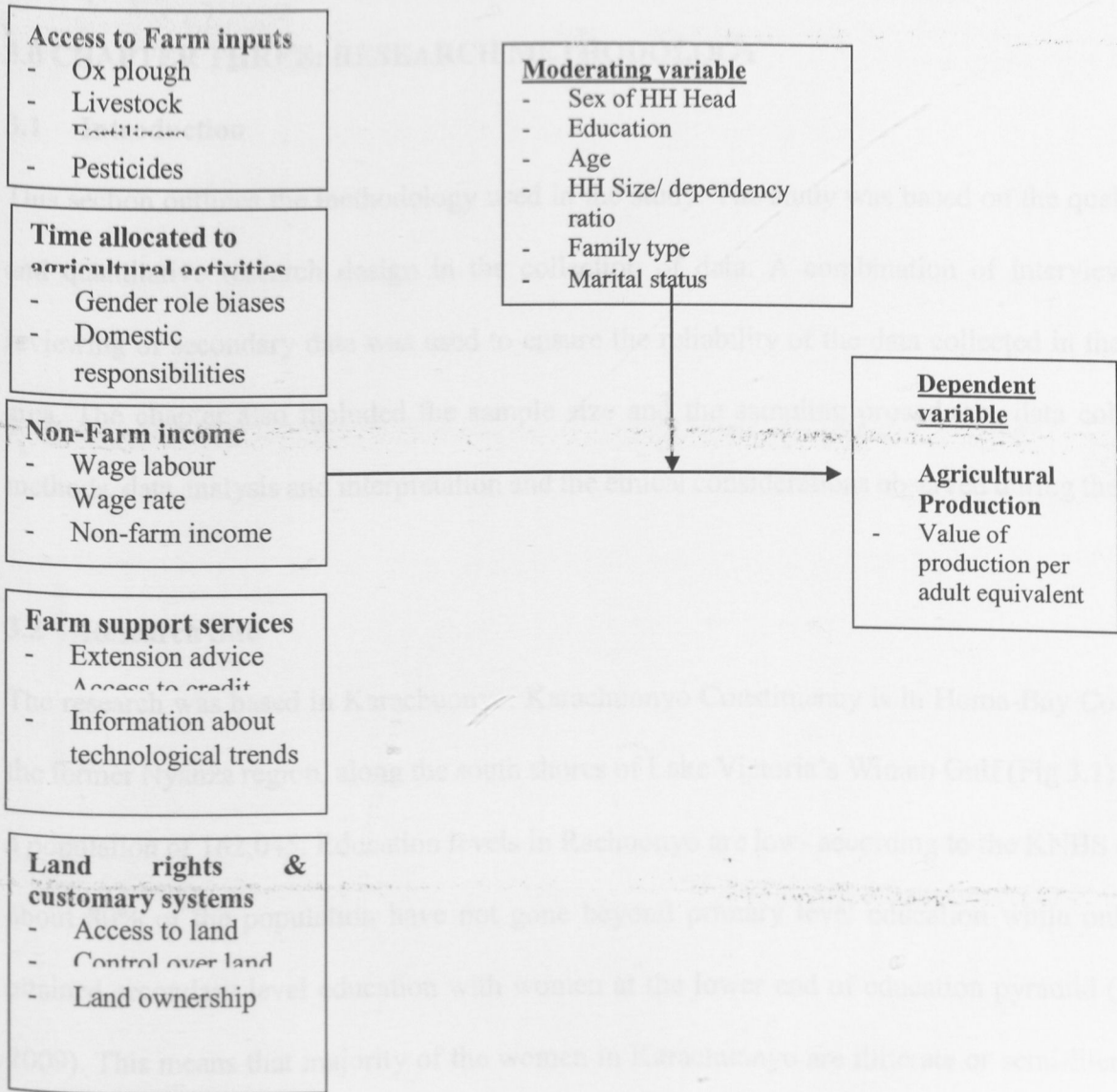
The framework is intended to assist planners to identify what women's equality and empowerment would mean in practice, and to determine to what extent a development intervention supports greater empowerment. The framework provides six tools to examine elements of a project's design or a sectoral program to determine and see if it affects the five different levels of equality either negatively, neutrally, or positively.

2.6.3 Conceptual Model

The findings from existing literature provided the foundation for the conceptual framework of this study with the outcome variable being tested. According to the above discussed concepts and theories, the researcher argued that there are both pull and push factors that influence women's roles and participation in agricultural production. Pull factors are those elements that enable or encourage women's role and participation while push factors are those elements that hinder women's role and participation in agricultural production. The study made use of the adjusted model recommended by Onam *et al.*, (2010) for assessing how gender of a household head affects other variables which influence agricultural production. Onam *et al.*, (2010) posited that gender of household head does not directly influence agricultural production but rather indirectly through its effects on other variables. For instance, time allocated to agricultural activities depends on gender/sex of household head. This is particularly pronounced in the Luo social set up where women's roles and responsibilities are different from those of men due to the fact that, apart from engaging in agricultural production just like men, they also do engage on non-agricultural productive and reproductive roles such as child care and other household chores. This directly influences scale and intensity of farm operations apart from indirectly affecting production.

Similarly, gender affects labour supply due to the fact that female headed households' sizes tend to be smaller than male headed households (Tiruneh *et al.*, 2001). The proposed framework added value to the Onam Framework by incorporating more independent variables; farm support services and land rights and customary systems. The framework depicted the relationship between a set of independent variables; farm asset inputs, time allocated to agricultural activities, non-farm income, farm support services, land rights and customary systems and the dependent variable (agricultural

production) with gender of Household Head treated as a moderating variable. The conceptual framework is shown in Figure 2.1.



Independent variables

Figure 2.1: Conceptual model

(Source: Modified Version Adopted from Onam et al., (2010))

3.0 CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section outlines the methodology used in the study. The study was based on the qualitative and quantitative research design in the collection of data. A combination of interviews and reviewing of secondary data was used to ensure the reliability of the data collected in the study area. The chapter also included the sample size and the sampling procedures, data collection methods, data analysis and interpretation and the ethical considerations observed during the study.

3.2 Research Site

The research was based in Karachuonyo. Karachuonyo Constituency is in Homa-Bay County in the former Nyanza region, along the south shores of Lake Victoria's Winam Gulf (Fig 3.1). It has a population of 162,045. Education levels in Karachuonyo are low- according to the KNBS (2009), about 80% of the population have not gone beyond primary level education while only 18% attained secondary level education with women at the lower end of education pyramid (KNBS, 2009). This means that majority of the women in Karachuonyo are illiterate or semi-literate and rely on agriculture for survival while some also engage in petty trade and other informal activities. In addition, most women provide the bulk of agricultural labour while most men engage in alternative non-farm activities in order to earn income for family expenditure needs (Onam, 2010).

Women are even more burdened as they are still required to perform reproductive roles like home making and in most instances they engage in other income generating activities like petty trade.

This labour burden is most pronounced among female headed households and widows (Onam, 2010). Karachuonyo covers about 500 Km² of which 80% is of a great agricultural potential (arable) with rich cotton and loam soils. Although classified as semi-arid, the Constituency normally experiences the long March-May seasonal rains that support production of short life-cycle crops like hybrid maize, sorghum, beans, tomatoes and vegetables.

Farmers along the lakes and rivers are also engaged in all year round production of maize and horticultural crops (vegetable, watermelon and tomatoes) through pump irrigation (KNBS, 2009). The black cotton soils found in most parts of the constituency enables farmers to grow cotton that is used by local cloth industries to make fabrics. In addition, most of the Karachuonyo residents keep indigenous cattle (zebu), sheep and goats with few exotic dairy animals and poultry farming (Onam, 2010).

Figure 3.1: Map of Karachuonyo Constituency

Source: IEBC (2017)

3.3 Research Design

According to Buckingham and Saunders (2004), a research design is a plan or guide for data collection and interpretation, with sets of rules that make the research a conceptualized

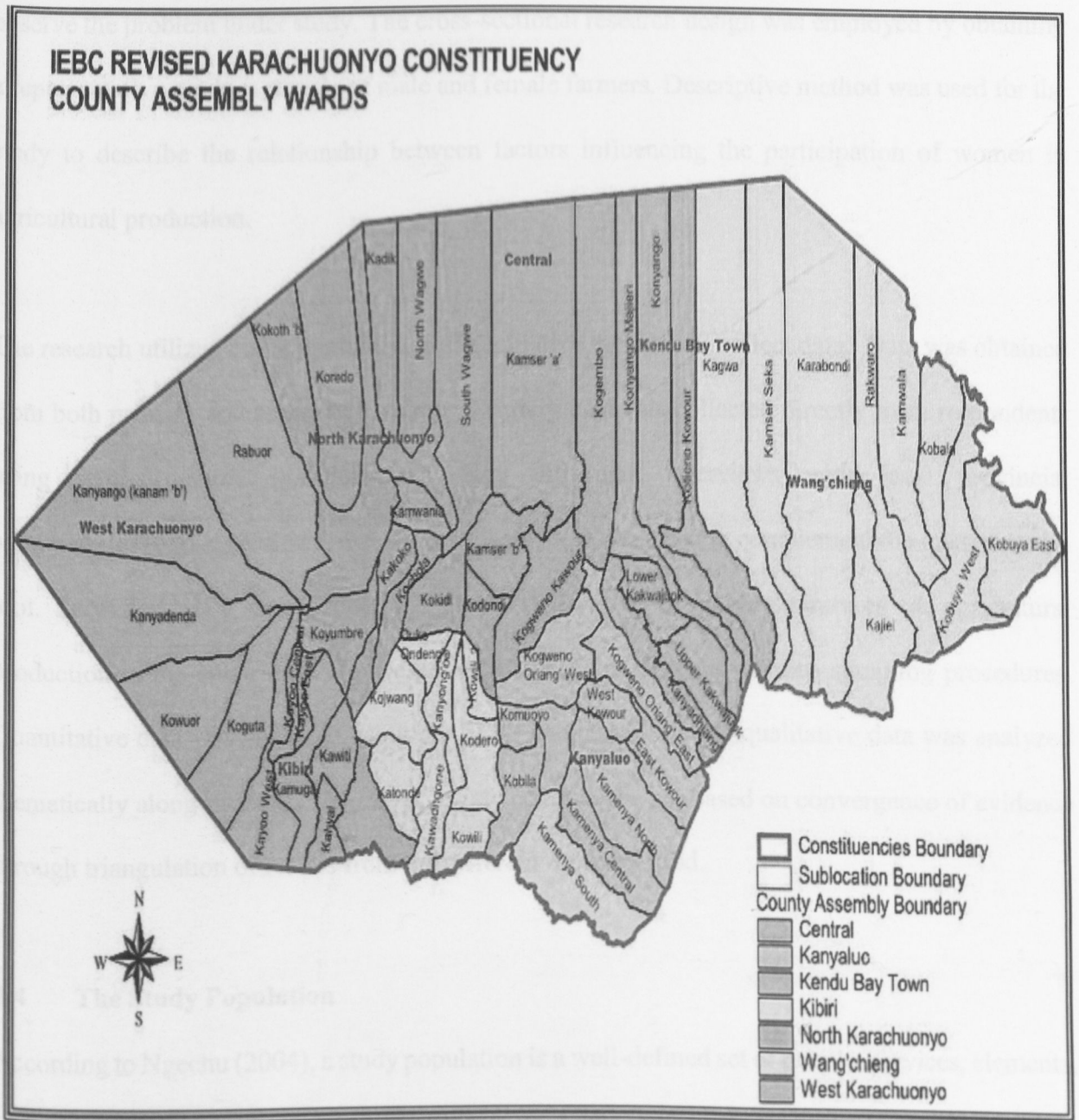


Figure 3.1: Map of Karachuonyo Constituency

Source: IEBC (2013)

3.3 Research Design

According to Buckingham and Saunders (2004), a research design is a plan or guide for data collection and interpretation, with sets of rules that enable the researcher to conceptualize and

observe the problem under study. The cross-sectional research design was employed by obtaining a representative random sample of male and female farmers. Descriptive method was used for the study to describe the relationship between factors influencing the participation of women in agricultural production.

The research utilized both quantitative and qualitative methods to collect data. Data was obtained from both primary and secondary sources. Primary data was collected directly from respondents using semi-structured questionnaires. Key informant interviews with local provincial administrators and agricultural extension officers were also used to complement the questionnaire tool. Secondary data was collected through reviews of available literatures on agricultural production in the study area. The respondents were drawn using various sampling procedures. Quantitative data was analyzed using the SPSS package while the qualitative data was analyzed thematically along the study objectives. Study conclusions are based on convergence of evidence through triangulation of results from the different methods used.

3.4 The Study Population

According to Ngechu (2004), a study population is a well-defined set of people, services, elements, and events, group of things or households that are being investigated. Mugenda (2008) describes study population as the total population which the researcher specifies in his or her proposal. The study population for this study comprised of all the 50,000 farmers in Karachuonyo Constituency.

3.5 Sample Population

Gall et al., (1996) define a sample as a portion of a population chosen by some clearly defined sets of procedures to represent the larger population and used to draw references about that population. Kachuonyo Constituency comprises of seven (7) County Assembly Wards (Karachuonyo West, North, Central, Kibiri, Kanyaluo, Wan'gchieng' and Kendu-Bay Town). Each of the county assemblies has between 8-13 sub locations. The sample population for this study comprised of randomly chosen men and women farmers in Kawiti sub locations. The unit of analysis was the individual farmer.

3.6 Sampling Procedures

The sampling for this study was based on two-stage probability random sampling procedure. The seven county assemblies formed the primary sampling units (Enumeration Areas). Out of the seven country assemblies, Karachuonyo west was randomly chosen. Through convenience sampling, Kawiti sub-location was then selected by the researcher from the initially chosen county assemblies.

The sample frame- a list of households from the chosen sub location was obtained from the local assistant chief. An initial inquiry with the local provincial administration had put the total number of farmers at 789. A representative sample size of 50 farmers was then selected for questionnaire interviews. The households to participate in the study were randomly chosen by use of "random sampling of cases command" in SPSS. In addition, the key informants were purposively selected on the basis of their expert knowledgeable on certain issues regarding the study topic. The key informants included the local agricultural extension officer, the chief and assistant chief, village

elders, men and women who have knowledge on land ownership and traditions that undermines women's full participation in agriculture.

3.7 Data Collection Methods

Data Collection is the process of gathering data and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypothesis, and evaluate outcomes (Lescroel, 2014). Data collection methods refer to the device used to collect data, such as a paper questionnaire or computer assisted interviewing system.

This study employed the following methods;

3.7.1 Questionnaire Survey

The main tool for data collections was semi-structured questionnaires. A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents (Fowler, 1988). The researcher administered part of the questionnaires and the rest were left with the respondents to fill at their convenience. The questions covered such areas as; personal data, family information, education levels, role of women in agricultural production, access to land and their tenure security, access to extension, credit, information and other support services, their level of decision making and why women continue to remain invisible in agricultural production. The questionnaire was pilot tested and necessary corrections done based on the pilot field experiences (Appendix II).

3.7.2 Key Informant Interviews

Key informant interviews are qualitative in-depth interviews with people who know what is going on in the community (Carter and Bealieu, 1992). The Key informants included the local provincial administrators (chiefs, assistant chief and village elders), extension officers and women who are

successful in farming. The chiefs and the village elders provided information on the land use and acquisition patterns in the study area and the socio-cultural orientation of the study population that are related to agricultural production.

The extension officers provided insights on how they deal with women; factors that undermine their roles and contribute to their invisibility in agricultural production while women farmers provided highlights on issues that affect them in agricultural production. The interviews were conducted in the form of a conversation where the interviewer was able to establish the general direction of the conversation and pursue specific topics related to the study enquiry.

3.7.3 Secondary Sources

To complement the primary data, the review of secondary material was used in the course of data collection for the study. Materials from scholarly literature such as books, journal articles, dissertations, reports from the ministry of agriculture and lands ministry at the county were used. Wolcott (1995: 56) cited in Songelwa (2009: 103) refers to this technique as the “art of doing fieldwork”, which comprises not only ‘being there’ with the display of courtesy and common sense, but also ‘getting nosy’ through aggressively seeking information, and making the ‘best use of the work of others’ through perusing archival documents and libraries. This technique allowed the researcher to ‘represent fairly the various multiple realities’ not only with people related to the project, but also with other researchers through their work and to trace “patterns or trends and styles of behavior” (Yin, 1993: 61).

3.8 Data Analysis and Interpretation

The analysis of data brings order, structure and meaning to the mass of data collected (De Vos 1998: 63). Interpretation on the other hand involves making sense or creating meaning from the

data collected. SPSS software was used for data analysis. Descriptive analysis (percentages, cross tabulations and graphs) to show the nature and the influence of studied variables. Qualitative analysis was done to complement the quantitative methods described. This was done through content and thematic analysis of information got from key informants and analyzed documents. According to Babbie et al., (2010: 56) content analysis allows the researcher to examine written documents or transcriptions of recorded verbal communication. This involved systematically coding and organizing data into themes and concepts that address the research questions and objectively identifying characteristics of the message.

3.9 Ethical Considerations

Ethical issues in research relates to the protection of human participants to ensure the absence or lessen the possibility of harm, anxiety, discomfort or trauma (Coup & Schneider 2007). The researcher abided by all the ethical principles on research on human beings. The researcher sought for informed consent from every participant; at the initial contact, the researcher explained the study verbally, then provided the participants with a copy of the consent form (Appendix I). The researcher also explained to participants that they had the right to withdraw from the study at any time. The participants were also informed that their responses remained anonymous and that the questionnaires were only used for academic purposes. The researcher hopes that this study will be of benefit to the gender and development field and subsequently improve the lives of rural women farmers. In addition, the participants were informed that the results of the study could be shared with them if they so wish at no cost to them at all.

4.0 CHAPTER FOUR: RECOGNIZING THE ROLE OF KENYAN WOMEN IN AGRICULTURAL PRODUCTION

4.1 Introduction

This chapter presents the findings of the study. The findings are analysed and interpreted in line with the study objectives.

4.2 General Information

Out of the 50 Questionnaires that were administered to the respondents by the researcher, 42 of the Questionnaires were correctly filled and returned. This represented a response rate of 84%, only 8 of the Questionnaires returned were not correctly filled and therefore, were disqualified which represented 16% of the total Questionnaires issued. Of the filled questionnaires, 68% were female while 32% were male.

4.3 Socio-Demographic Characteristics of the Respondents

Quantitative data was collected and analyzed on demographic and social characteristics of survey respondents. Respondents were asked about their age, sex, marital status, educational level and skills/knowledge in agriculture.

4.3.1 Gender Representation of the Respondents

The study respondents included both men and women with majority being female (68%) while 32% were male. The high number of female respondents enabled the researcher to get more information regarding women's participation and work load within the households. The inclusion of men as study respondents was for the researcher to understand men's perception on women's participation and performance in agriculture.

Figure 4.1 below is a presentation of the distribution of respondents' gender.

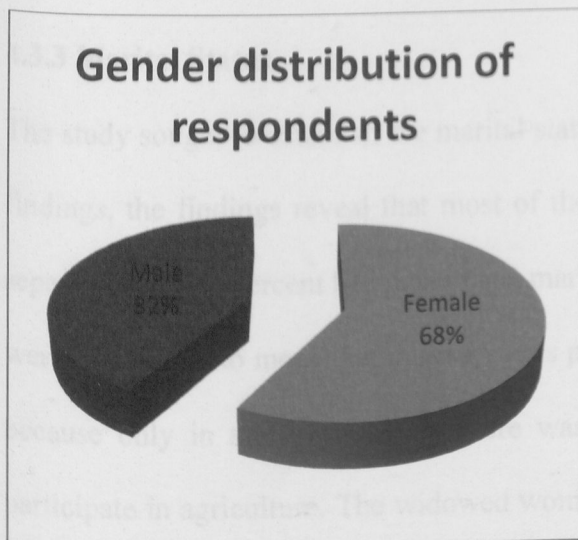


Figure 4.1 Gender Distribution of study respondents

4.3.2 Age of Respondents

The analysis of age distribution of the respondents in this study revealed that majority (48%) of the respondents was between 40 – 50 years. This was followed by the category of between 29 – 39 years at 29 percent. The rest of the categories recorded below seven percent.

Table 4.1 below shows the age distribution of the respondents.

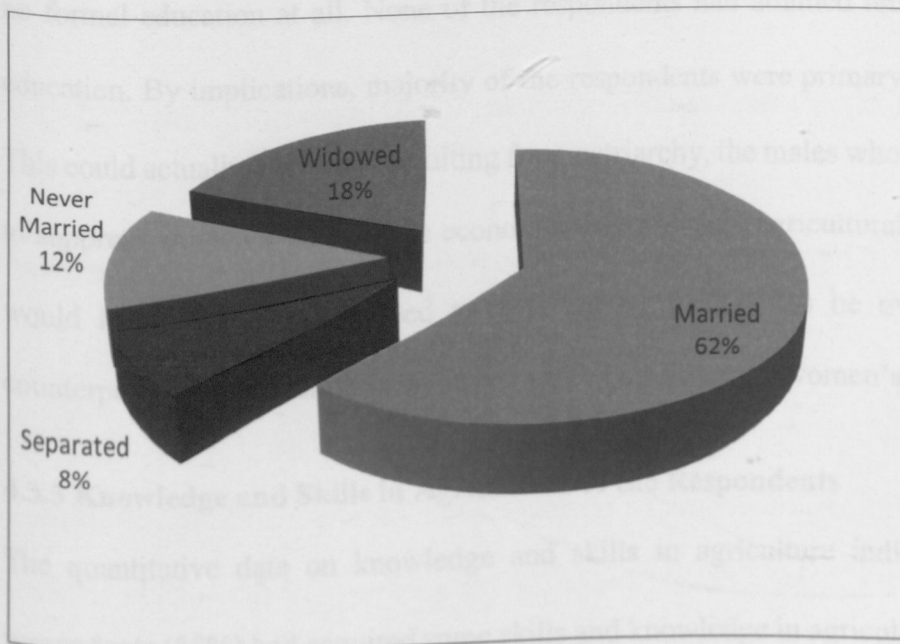
Table 4.1 Distribution by age

Age group	Frequency	Percentage
18-28	3	7%
29-39	12	29%
40-50	20	48%
51-60	3	7%
60-70	3	7%
80 & above	1	2%

4.3.3 Marital Status

The study sought to establish the marital status of the respondents, figure 4.2 below presents the findings, the findings reveal that most of the respondents (62%) were married, 8 percent were separated, and 12 percent had never been married while 18 percent were widowed. These findings were interpreted to mean that marital status played a role in women's participation in agriculture because only in situations where there was presence of a husband did the women partially participate in agriculture. The widowed women were visible in agricultural production while the separated and never married category were found to minimally participate in agriculture or did not participate at all.

Figure 4.2: Marital status of respondents



4.3.4 Education Level of Respondents

Further, the study sought to establish the education level of the respondents, the analysis of the data collected is represented in the table 4.2;

Level of education	frequency	Percentage
No formal education	7	16
Primary	23	55
Secondary	12	29
University or college	0	0
Any other specify	0	0
TOTAL	42	100

Table 4.2 Distribution by education Level of respondents

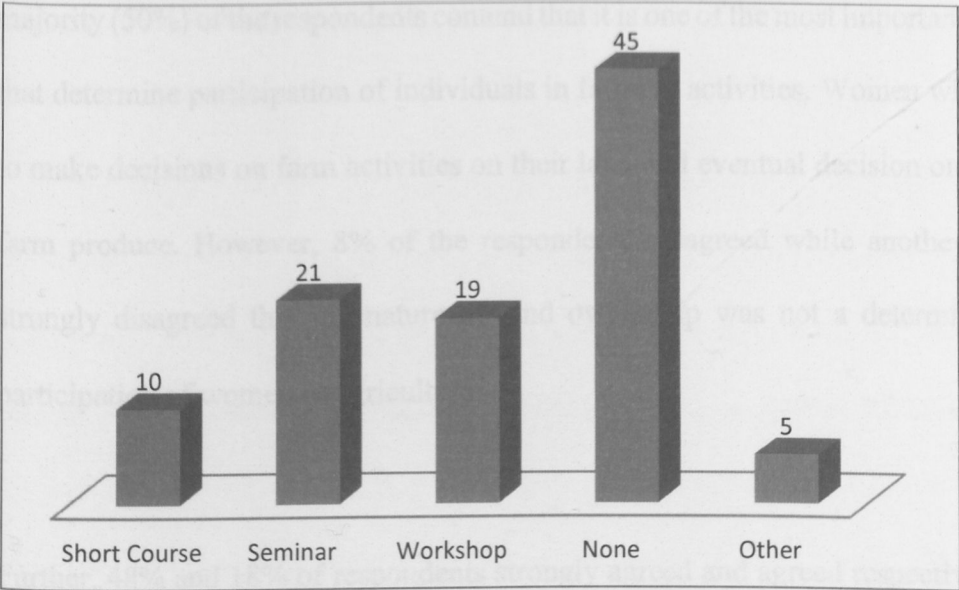
From the data collected, the majority 23 (55%) of the respondents had primary level qualifications, 12 (29%) of the respondents had secondary qualifications while 7 (16%) of the respondents had no formal education at all. None of the respondents had attained university or college level of education. By implications, majority of the respondents were primary school certificate holders. This could actually imply that resulting from patriarchy, the males who are less educated are likely to suppress women's visibility in economic activities like agricultural production. In addition, it would imply that less educated women are more likely to be overpowered by their male counterparts. The education level therefore, has influence on women's visibility in agriculture.

4.3.5 Knowledge and Skills in Agriculture of the Respondents

The quantitative data on knowledge and skills in agriculture indicates that majority of the respondents (55%) had acquired some skills and knowledge in agriculture. Among those who had acquired skills in agriculture, 21 and 19 percent had attended seminars and workshops respectively for training in agriculture. Majority (45%) of the respondents however had not acquired any

knowledge and skills in agriculture. This could explain why conventional agriculture is largely practiced in Kawiti Sub-location.

Figure 4.3 Distribution of respondents by specialized training in agriculture



4.4 The Socio-Cultural and Economic Factors in Women’s Participation in Agriculture

This section presents the findings on the socio-cultural and economic factors that influence women’s participation in agriculture.

4.4.1 Education, Decision Making and Family Size

The study sought to establish from the respondents some of the socio-cultural factors that militate against the visibility of women’s participation and contribution to agriculture. From the findings, majority (49%) of the respondents strongly agreed that the level of education attained by a woman strongly influences her ability to participate and positively contribute in family agricultural activities, 17% of the respondents agreed that level of education was a contributing factor, 11% of the respondents were of the opinion that the level of education does not influence women’s participation in agriculture and only 15% strongly believed that the level of education is

insignificant in influencing women's participation in agricultural activities. By implication, most of the respondents believed that the level of education was a significant factor in influencing women's visibility and participation in agricultural production. On nature of land ownership, majority (50%) of the respondents contend that it is one of the most important socio-cultural factors that determine participation of individuals in farming activities. Women who own land are likely to make decisions on farm activities on their land and eventual decision on what to do with their farm produce. However, 8% of the respondents disagreed while another 15% of respondents strongly disagreed that the nature of land ownership was not a determinant of visibility and participation of women in agriculture.

Further, 48% and 18% of respondents strongly agreed and agreed respectively that family size is a determinant of visibility of women involvement in agricultural activities; only 8% of the respondents were of the opinion that family size did not determine visibility of women involvement in agricultural activities. ability to make decision on family issues was recorded to be a great determinant of visibility of women in agricultural activities, 53% of the respondents strongly agreed while 15% agreed that the ability to make decision greatly influences the women's participation in agricultural activities, Only 13% of the respondents disagreed that this factor is a determinant of visibility of women's participation in agriculture.

By implication, women participation in agricultural activities refers to a women's' involvement in agricultural activities at any stage in the value chain in agriculture at the family level and it is equally one of the most important indicators of women's empowerment at the household level. The findings revealed that it is less likely for a woman to be involved in agricultural activities if

this woman is less educated, does not make decisions independently, does not own land and is in a large family. Considering the impact of education on improving agricultural production, the high illiteracy level of the respondents in this study has implications in the female involvement in agriculture. It is even worse given the conventional agricultural methods still being embraced in the study area.

A key informant interview with the assistant chief of *Kawiti* sub-location revealed the same aspects of women involvement in agricultural activities. The key informant said *“most women in this village are either not educated or they just have basic education that essentially means that these women are less empowered and would not demand for their rights to actively participate in agriculture. Besides, even if they were to be actively involved, the technology they would apply would be primitive since they do not have any technical know-how.”* The assistant chief while citing some instances within the community echoes the views of the respondents in contending that educated women in *Kawiti* sub-location tend to be more visible in agricultural activities especially on matters regarding on what to do with the farm produce.

Further, the assistant chief asserts that the less educated women are more visible at the farm preparation and production process but are less visible on decisions made regarding the disposal of the produce. The women are limited in the decision making process on when, how much and where to sell the farm produce. This becomes a male preserve despite the fact that women are responsible for the production process. Another key informant while expressing her views said: *“Conventionally, women in Kawiti have their place in the society, matters of decision making are sole responsibilities of the male. An imagination that a woman would make decision on what and*

when to sell agricultural produce is far-fetched. Theirs' is to accept the husband's decision; in fact women here are not even consulted on such issues to begin with."

Regarding training and extension work, the assistant chief alluded to the fact that women are often left out when it comes to training and extension services provided to the community. Instead, men attend most of the training and are the beneficiaries of extension services despite the fact that in real life, it is the women who are engaged in the production process. This lack of training he attributes to the high illiteracy levels amongst women in the community.

An interview with the area Agricultural Extension Officer revealed that women, who were not independent in decision making, were less likely to actively participate in agricultural activities. The officer pointed out a particular case where after the family harvested their farm produce, a male household head sold all the produce and used the money for selfish gains. He said: *"Independence in decision making is very important when it concerns issues to do with sale of agricultural produce, for instance, the other day there was a family where all their agricultural harvest was sold by the husband who then used the money for alcohol, he disappeared for weeks only to come back claiming that he didn't know the evil that pushed him to do that. The family is left even without food."*

A village elder revealed that male dominance in agricultural activities was mostly manifested at the end of the agriculture value chain in the village. He noted that women's participation was more visible at the initial stages of the production process; women were active during land preparation, ploughing, weeding, and post harvesting activities among others but not at the point of sale of the produce. The elders further revealed that the customary laws of the Luo do not allow for land

ownership by women and as such, women were less likely to economically participate in agriculture other than at subsistence levels.

By extension, they contend that such customary laws and cultural practices promote male dominance in agricultural activities despite being only visible at the end of the value chain. The findings are also supported by the findings from the literature review, Action Aid (2011:19) and Bikaako and Ssenkumba (2003: 247) had earlier noted that women farmers' access to land and having control over it is essential for basic livelihood, food for their families, more economic independence and a way out of poverty. Land title and tenure tend to be vested in men, either by legal condition or by socio-cultural norms. Land reform and resettlement have tended to reinforce this bias against tenure for women. Compared to men, women farms are smaller and more dispersed and are less likely to hold title, secure tenure, or the same rights to use, improve, or dispose of land (ARDO, 2011).

Table 4.4: Distribution of respondents by % on how education, decision making and family size influence women's participation in agriculture

	strongly agree	agree	Neutral	Disagree	Strongly disagree
Level of education of women	49	17	8	11	15
Land ownership by women.	50	15	12	8	15
Size of family	48	18	14	8	12
Customary Laws	52	15	13	13	7
Decision making ability in family issues	53	15	8	13	11

All the figures are in percentages. They all show the level of different influence certain variables impose on the decision making process by women in agricultural production.

4.4.2 Access to Farm Inputs

The study sought to establish the influence of women's ability to access farm inputs on their participation and contribution in agriculture. The result indicates that out of 30 female respondents, 30% own and use improved seeds but only 17% indicated that the seeds were adequate. 13% of female respondents indicated owning alternative fertilizer but only 6.7% used the fertilizer adequately. Majority of the respondents indicated that the land was very fertile and fertilizer was not necessary. 30% of the female respondents own manure, 40% apply manure and 40% say that the manure is adequate. Manure in the study area is animal's waste product and can easily be collected from a neighbors homestead. On the use and ownership of modern tools and equipment,

30% of the female respondents owned modern farming tools, 30% indicated that the tools were adequate though only 6.7% indicated use of the modern tools. About 6.7% of the female respondents indicated ownership and use of herbicides/pesticides. Another 6.7% of the female respondents indicated that they own and make use of the modern tools adequately. This is shown in table 4.5 below.

Interviews with the village elders, successful women in agriculture, sub-chief and agricultural extension officer revealed that farm inputs was a key factor in the visibility of women and their participation in agriculture. It was noted that households where farm inputs especially seeds was unavailable, there was no visibility of women in agriculture. A woman respondent said, *"Majority of the people in this community especially women still apply the conventional methods like preserving maize seed by smoke, manual tools and not applying fertilizers and so the production continue to go down"*.

In the same note, a village elder said, *"Manure is an important component in farming in this village where majority cannot afford alternative fertilizer, my wife for instance is in charge of the manure in my home, it is her who decides what amount should be taken to the farm and if there is excess she sells it."*

The area sub-chief on the other hand said: *"In as much as we all want the women to actively participate at all stages in agricultural production, the men in my sub-location are so domineering especially at the point of sale, they would not easily let their women play this role. I believe there is need for sensitization in the sub-location to make my people understand that women are equal partners in the agriculture industry."*

From the findings, it can be deduced that access to better seed, manure, alternative fertilizer, and farm equipment contribute considerably to the visibility and participation of women in agricultural production. Women in the study area are often engaged in farming without the benefit of the improved inputs and services required for a more productive and remunerative agriculture. These findings are supported by the literature reviewed where Seshu and Malavika, (1989) who contend that better seeds, farm tools and equipment, manure and sustainable alternatives to fertilizers and pesticides will enable women farmers to farm sustainably, be more productive, and achieve food security.

Table 4.5: The influence of access to farm inputs on women's participation in agriculture

	Ownership	Use	adequacy	None of the above
Better seeds	30	30	17	23
Alternative fertilizer	13	6.7	6.7	73.6
Pesticides/Herbicides	6.7	6.7	6.7	79.9
Modern Farm tools and equipment	30	6.7%	30	33.3
Manure	30	40	40	0

The figures are in percentages

4.4.3 Access to Extension Services

The study sought to establish whether the farmers accessed extension services. The findings indicate that only 17.4% of the male respondents and 9.1% of the female respondents had access to extension services in 2013. The data indicates that majority received the extension services

between 2-9 times in 2013. About 35.4% of male respondents accessed extension services between 2-4 times while 35.2% male and 28.6% female respondents accessed extension services between 5-9 times. It is believed that access to extension services is a key contributor to women's participation in agriculture. In situations where majority of the farmers do not access such services, there is high likelihood that there will be less participation in agriculture as the yields are unlikely to be attractive as was revealed in an interview with the agricultural extension officer. The extension officer said *"It is funny in this community in that whenever I come to give extension services, it is the men who I meet in most cases, even when I get female farmers; they prefer calling their husbands to deal with me. I wonder what can be done to boost the self-esteem of the female farmers so that they can have confidence to directly deal with me"*.

Table 4.6 Access to any extension services in 2013

	Access		Frequency	
	No	yes	2-4	5-9
Male	82.6%	17.4%	35.4%	35.2%
Female	90.9%	9.1%	0.0%	28.6%

4.5 Socio-Economic Factors Undermining the Role of Women in Agricultural Production

This section presents the findings on the socio-economic factors that undermine the role of women in agricultural production.

4.5.1 Agricultural Production Resources

The study sought to investigate some of the socio-economic factors that undermine the role of women in agricultural production. The findings reveal that 59% of the respondents believed that when few women hold agricultural production resources such as land, animals, and machinery, they are unlikely to be visible in agricultural production activities. This therefore, means that possession of agricultural production resources is an important factor in influencing visibility and participation of women in agricultural activities. Only 5% and 8% of the respondents considered this factor less important and not important at all respectively. Similarly, 60% of the respondents opined that the fact that women perform all un-mechanized agricultural tasks and also perform multiple tasks thus, adding more burden to them equally contribute to their less participation in economic agricultural production.

On the issue that women earn fewer wage, especially in joint, informal and private sector contributed to male dominance in agricultural production, the findings revealed that 58% of the respondents strongly agreed that women earn less compared to their male counterparts in agricultural production ventures. This contributed to their less visibility and participation in agricultural activities. High input cost was also cited by 65% of the respondents as a contributing factor to the less visibility and participation of women in agricultural activities. 68% of the respondents believed that lack of access to credit by women, contributed to their low participation

in agricultural production. About 70% of the respondents were of the opinion that market inaccessibility contributed to the less visibility and participation of women in agriculture.

Further, lack of alternative sources of income was cited by 60% of the respondents as a contributor to the less visibility and participation of women in agricultural production as shown in table 4.7 below).

By implication, very few women are holding agricultural production resources such as land, animals and machinery. Most of them perform all manners of multiple un-mechanized agricultural tasks which add more burden to them. Equally, women earn fewer wages, especially in joint, informal and private sector ventures. These accompanied by the high cost of inputs; lack of access to credit; market inaccessibility; lack of alternative sources of income and lack of security all combine to render women a vulnerable group in agricultural production.

A key informant interview with a village elder also revealed that there are varied indicators among women that influence their participation in agricultural production; the informant noted that women who participate in agricultural production have access to factors of production such as credit facilities and as such are empowered and would not be dominated by their male counterparts. The village elder said, *"The banks I know require that one gives some form of security to access credit, in this village, women don't own land and as such may not even secure credit, how then are they to be visible in agricultural production?"* Evidence from the literature review also supports the findings. Manuh (1998:13) contends that many credit associations and export crop market cooperatives limit membership to household heads in many African countries, thereby excluding married and single women.

Table 4.7 Socio-economic factors undermining the role of women in agriculture

Indicators	Very important	important	Neutral	less important	not important
Few women holding of agricultural production resources.	59	24	4	5	8
Women perform all un-mechanized agricultural tasks and perform multiple tasks.	60	31	8	1	0
Low wage income for women	58	30	0	10	2
High inputs costs	65	23	7	5	0
Lack of Access to credit by women	68	30	0	2	0
Market inaccessibility	0	2	2	70	28
Lack of alternative source of income	20	60	1	18	2
Lack of security	70	16	4	3	7

4.5.2 Importance of Seeking Women's Opinion in Agricultural Production and Marketing

Activities

On the importance of seeking women's opinion in agricultural production and marketing activities, the findings revealed that 60% of the respondents believed that seeking the opinion of women on agricultural production process including land preparation such as bush clearing, ploughing, time

for crop protection against insects (insecticide), pests (pesticide), birds, time for weeding, time for harvesting and time for threshing, winnowing and drying was very important.

The importance of seeking women's opinion on land size for farming was believed to be very important by 59% of the respondents. Furthermore, women's opinion on time of sowing was deemed to be less important in determining the visibility and participation of women in agricultural production. The study further revealed that 20% of the respondents believed that seeking women's opinion on time of manure application was important, 55% of the respondents believed that this was not important. About 60% of the respondents were of the opinion that women's opinion on the amount and quantity of crop for sale was a very important determinant of women's visibility and participation in agricultural production as shown in table 4.8 below.

Interview with village elders revealed that seeking women's opinion on varied agricultural production activities and marketing activities was important in contributing to their visibility and participation in agriculture. The discussions further revealed that women whose opinions are sought feel part of the process and feel less dominated by their male counterparts. The involvement of women's organizations in the process can facilitate the achievement of gender equity targets. Furthermore, gender targets for access and tenure security should be monitored and officials held accountable for meeting them (FAO, 2011:48).

Table 4.8 Importance of seeking women's opinion in agricultural production and marketing activities

	Very important	important	Neutral	less important	not important
Agricultural production process.	60	23	7	7	3
Land size for crop production.	59	26	0	10	5
Time of Sowing	0	7	10	28	55
Time of manure application.	20	9	9	62	0
Amount and quantity of crop sale.	60	18	10	5	2

All figures are in percentages.

4.6 Best practices for enhancing women visibility in agricultural production

This section highlights best practices that when applied could enhance women's visibility in agriculture

4.6.1 Education and Training of Women

The participants to the study were of the opinion that the high illiteracy levels in Kawiti village especially amongst women play a major role in the prevailing invisibility of women in agriculture. The observance of customary laws which reinforce the societal norms leads to the subordination

of women both at Household and community levels and does not allow them to embrace modern agricultural methods.

The respondents noted that if women's education (formal or informal) in the village is enhanced, their participation will be enhanced. Education enhances active participation in innovation, development of new knowledge and embracing new technology. An extension worker noted thus: *"Illiteracy is a major constraint facing women in development. Women are unable to understand and utilize technical information because they lack basic formal education, majority of women farmers are unable to read and understand the written material that we provide."*

A village elder noted thus: *"This area really requires immediate intervention of the government. A training outreach targeting groups of women active in micro-enterprise and marketing should be developed and sub-sector groups assisted in strategizing and implementing changes, such as improving access to raw materials, building better market linkages, and developing marketing plans."*

A woman respondent commented thus: *"There is need for training programmes that will seek to help women manage their time properly in order for them to manage their multiple roles effectively and to be successful and efficient at whatever they choose to do as well as other training programmes on reducing stereotyping for both men and women and especially for children."*

4.6.2 Review Laws to Address the Factors Affecting Women in Agriculture

The respondents were of the opinion that there should be complete law reforms especially on land as a vital resource for agriculture. A discussion with extension officer in the area revealed that customary laws on access to land and inheritance in the area are discriminatory and unconstitutional. He said *“Customary and other tenancies in this area should be reformed to ensure affordability and accessibility especially to women. The government should ensure that achieving equity in access to and control of land becomes an integral component of the Land Administration”*.

4.6.3 Advocacy and Community Conversation on Women’s Land Rights

The respondents highlighted that the problems facing women in the area is associated with customary laws that are discriminatory to women as well as inefficiencies in land administration that tends to impact negatively on women and other minority groups. The customary laws tend to override the statutory law that allows for land rights for both men and women. From an excerpt with an interviewee the following was cited. *“We women need to be aware that we have equal rights as men to access land either directly or indirectly. Majority of us in this village have limited or no access to or control over land. The practice here is that land is allocated to men, who are the heads of household and women’s access and use of the land is through their husbands and sons. Holding public meetings to advocate and dialogue on these negative customary systems of inheritance as well as the importance of women acquiring land directly will help change the perspective of society on women.”*

Despite the lack of awareness that some women have on their rights to land ownership, women in the village do not feel that it is their right to own land personally, as their mothers did not do so. These women are not even aware of such things as owning property. In another excerpt the following was cited, *"Many women in this village are not aware of some statutory laws that offer them opportunities to acquire land; or the procedures that they need to follow in order to get land"*. This shows that majority of women in Kawiti village are still ignorant of the existence of such laws in the country, which are meant to protect them against traditional laws and social norms.

The advocacy will help raise awareness on women's land right which is embedded in the constitution and dialogue on discriminatory customary laws violating women's right to land will help the community to come to a common understanding on how women acquiring land will help boost agricultural production at household and community levels.

4.6.4 Equality in Decision Making

Enhancing the decision making powers of women on socio-cultural and economic matters was mentioned by women as one of the ways of enhancing their visibility in agricultural production. Women respondents cited limited decision making in agricultural production especially on sale of agricultural products which they had no control over. The women had equally limited decision making on the number of children to have. This solely lies with the man. Children are viewed as source of wealth in the village and therefore, the high number of children you have the better. This means that women allocate little time for agriculture due to equally demanding house chores. This is shown in the following excerpt *"If our men could allow us to have fewer children then we will have more time to spend on agricultural activities but because of the many children we have, we spend most of the time attending to household chores."*

4.6.5 Access to Labour, Technology and Extension Services

Use of manual tools, conventional methods of farming and limited/lack of access to extension services were cited as some of the reasons why women still remain invisible in agriculture. A woman informant cited that, *“If women in this village could be provided with labour and time saving machinery may be through setting up of plant pools within reach, agricultural production will be highly boosted here. Again, access to improved variety of seeds and seedlings as well as fertilizers and other chemicals needed to improve agricultural methods, could be enhanced by making them affordable to women farmers.”*

A village elder said, *“Women farmers here should be educated on new variety of crops that are being introduced as well as on other new and improved methods of farming through extension services.”*

4.6.6. Access to Farm Inputs and Credit

The participants cited opportunities to improve women’s access to inputs through provision of credit and farm inputs to women as very important for women to be recognized as important actors in agricultural economy. For instance, in an interview with a discussant, the following views were expressed, *“women face problems of access to their inputs, including credit (capital/money), women’s access to credit should therefore be enhanced. It was also cited that “a good number of us do not belong to community based organizations or co-operatives through which we can access credit or market our produce. We face greater difficulties than men, particularly with regard to participation in rural cooperatives and access to credit, training and extension services”.*

An extension officer noted thus: *“Formal microfinance institutions have failed to reach these women. This is attributed to the mismatch between the norms and procedures of the bank and on*

the other hand women's needs and constraints. Furthermore, the complexity of the procedures requires some form of literacy which is lacking in majority of poor women. They do not know that land can be used as collateral to obtain credit from financial institutions to address the challenge in accessing inputs”.

4.6.7 Capacity Enhancement on Gender Equality amongst Stakeholders

The respondents mentioned the community leaders entrusted with the implementation of the policies and laws reinforcing women's rights on access and control of resources to be aiding in violation of these rights. In arbitration of cases to do with rights of women, the customary laws prevail over statutory law. A woman respondent noted that, *“The government should ensure that capacity in gender equality is built amongst custodians of the societal norms that guide institutions that perpetuate gender inequalities. Some of the authorities to be equipped with such knowledge are the chiefs and their assistants. Further, Women in this village need to be made aware of their rights on access and control over agricultural resources so that they are able to make informed decisions. In addition, adult literacy should be promoted especially amongst women to improve on adoption of different initiatives besides comprehending loan application procedures.”*

5.0 CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The section presents the summary of findings, conclusions and recommendations based on results of the study. Other recommendations revolve around future areas of possible research.

5.2 Summary of Findings

5.2.1 Socio-Cultural factors that make Women's participation in Agriculture less valued

Many factors contribute to the lack of participation of women in agricultural development in the study site. Culturally, it is viewed that women are solely responsible for taking care of the household chores and bearing children with the provision of food not being their main cultural responsibility. However, as exhibited in the study site, women participate equally in agricultural activities. Moreover, women in Karachuonyo are still faced with socio-cultural boundaries which limit their participation in agricultural production.

The study established that cultural background which entails values; aspirations and customs of an individual affect the role that one plays in agricultural production. Culture was found to mirror in the factors such as level of education, land ownership, family size and decision making of women in the community.

5.2.2 Socio-Cultural and Economic construction of roles and activities in Agriculture

Socio-cultural and economic construction of roles and activities in agriculture was revealed to be a major influence in the participation and visibility of women in agricultural production. Some of

these factors include low decision making capacity, triple roles of women, overburdening of women by performance of un-mechanized agricultural tasks, lack of access to agricultural inputs, lack of access to credit facilities, poor remuneration of women, and lack of collateral. Triple role of women hinders participation of women in agricultural production because it takes much of women's time leaving them with little time for agricultural production. The fact that women perform un-mechanized agricultural tasks was deemed to immensely contribute to the invisibility of women in agricultural production because women are for example expected to plough the farm using hoes while men use oxen.

5.2.3 Mechanisms of addressing the socio-cultural and economic constraints that make women's participation invisible with a view to enhancing their performance in agriculture

Participants in the study were in agreement that the best practices that can be used to enhance women's visibility in agricultural production and should focus the following key areas; Advocacy, community conversation on social norms, stakeholder's capacity enhancement, Education and training, Access to labour, technology, credit, farm inputs and extension services. The findings of the study reveal that there is need to start conversations within the community on how to enhance the role of women in Agricultural production. The conversations should include advocacy within the community, awareness and sensitization. It is apparent that some women do not belong to any community based groups/organization and this has limited their accessibility to relevant information, agricultural inputs and markets for their produce.

5.3 Conclusion

The patriarchal nature of the society means that even though women contribute to agricultural production, the entire credit goes to men. Women in the study site have a near similar role to men in land preparation, selection of land size and in marketing of produce. However, it was realized that though women participate in the mentioned activities, their role in decision making on these activities is still hindered in the households. Although the findings of the study indicate that women have a role in land preparation just like the men, the same cannot be said when it comes to ownership of agricultural resources, most importantly land which is still under the control of men in the community. Owing to the roles that women perform as revealed by the study, it can be said that women only have a role to play on certain parts of the process of agricultural production and not as men who have a role in the whole process of agricultural production.

Agricultural production as an economic activity is greatly affected by the way in which men and women interact at all levels, and enabling them to interact in new ways will free up important resources for food production and poverty alleviation. From findings, it has been established that women perform their agricultural roles amidst other tasks such as household duties and other developmental duties with the consequence that these have not freed them. The study findings affirm the invisibility of women in agricultural production and indicates that the roles have been limited due to their many roles which have limited their participation in agricultural activities.

The study has also shown that factors such as limited access to land, the unavailability of credit to pursue farming interests, the lack of education and of innovative farming techniques and a general shift in agricultural culture continue to impact negatively on the involvement of women in farming.

Limited accesses of women to resources which are fundamental to agricultural production were found to make a significant contribution to the invisibility of women in agricultural development in the study village.

Female contribution to agricultural production in Karachuonyo is found to be significantly higher than that of males because they participate in almost all farming activities. Such activities include more un-mechanized farm duties, domestic chores and community development work. These findings support the argument that gender role in households are socially constructed and not sexually determined. Gender roles can thus be more responsive to changes in farming systems, economic conditions, cultural beliefs and practices.

The difference in the agricultural task involvement of men in these study site indicate that men had become less involved than women in farming when compared to what has been known about males involvement in agricultural production. This could translate to mean that over the years, women have taken-over most of the male related traditional farm tasks. The reasons for this difference could result from the sizes of their families, changing economic conditions, absence of husbands in the villages, children's educational adventures and the quest for financial independence among others.

5.4 Recommendations

Through the study findings, it was affirmed that women have a role to play in the contribution to social and economic development through agriculture in particular. However, this is only possible if the challenges women are facing in agricultural development are addressed.

- It is important to continue championing the improvement of girl's education in the community through a collaborative approach that should include the county government, non-governmental organization and other stakeholders.
- Women in the study group are members of various women's group thus these social structures should be used to improve the level of education for the women thereby encouraging the instilling of new values among the women and making them aware of their constitutional rights as enshrined in the new constitution.
- There are more women especially young women who need to be taught about the advantages and the need to support themselves through agricultural activities. It is therefore, strongly suggested that women at the village level be educated on the importance of agriculture. By engaging them more in crop production and cattle rearing and providing the relevant support, the women in the villager will be able to produce enough for themselves and contribute immensely to the socio-economic development and poverty alleviation in the community.
- It is of necessity to make the existing women empowerment fund easily accessible to the rural women, particularly the ones participating in agricultural development. This will require the collaboration of stakeholders, county government and the national government.

- An integrated approach is necessary to address the challenges that limit women in agricultural development. Such mechanism should be able to enable both men and women to work together and not to exclude any one party.
- New and innovative agricultural techniques can be facilitated in this village in an attempt to revive the full potential of agriculture. This could be done in the form of community workshops. In these workshops, women could be taught new agricultural techniques which are more effective than the traditional ones. In the long run, these workshops can inspire and motivate women to actively participate in agriculture.
- Measures should be put in place to ensure that land registration and titling processes promote joint registration of conjugal family farmlands to enhance women's land tenure security.
- Women's contribution to the development of farms should be recognized and compensated at divorce and on death of their spouses.
- The state should take steps, in conjunction with the chiefs and traditional councils to address customary laws and practices of access to and control over land that are discriminatory to women.
- The government and NGO's should ensure that women have access to services that will enable them engage effectively in agriculture production. Market infrastructure and information should be made available to women farmers if market oriented farming is to be achieved. In line with services, the agriculture sector should ensure that there is enough capacity in terms of human resources especially women to provide extension services to women farmers.

5.5 Areas for Further Research

The researcher suggests that further research needs to be done to establish whether introduction of subsidies on farm inputs and the willingness by the government to guarantee women seeking credit facilities will indeed yield more visibility of women in agriculture and enhance their potential.

REFERENCES

- ActionAid (2011). *Investing in Women Smallholder Farmers: An Action Aid International Briefing*, available at http://www.actionaid.org/sites/files/actionaid/policy_briefing_investing_in_women_smallholder_farmers.pdf [04 June 2013]
- ActionAid (2012) *What Works for Women: Proven approaches for empowering women smallholders and achieving food security*, available at <http://www.actionaid.org/sites/files/actionaid/whatworksforwomenfinal.pdf> [10 June 2013]
- Akinyi-Nzioki, E. (2007), *Land and Property Rights*, Paper produced for the APF Gender Expert Meeting, pp.18-20
- Akua B.D, (2010), Marriage, Labour and Land in Ghana: Some Matrilineal and Patrilineal Perspectives, 303, *Africa* (Edinburgh University Press) 80, no. 2, 301-321, [14 May 2013].
- Amarech, A. (2004). *Research on Gender and Development*, Hawassa: In Messay T. (2012). *an assessment on the role of women in agriculture in southern nation nationality people's region*. New Delhi, India pp13-16
- Ani, A. O., Ongunnika O. and Ifah S. S. (2010). Relationship between socio-economies characteristics of rural women farmers and their adoption of farm technologies in Southern Ebonyi State Nigeria. *International journal of agriculture and biology*, Vol. (5): pp 802-805
- Anselm, A. E. and Taofeeq A. A. (2010). Determinants of women's contribution to farming decision making in cocoa based agro-forest household of Ekiti State, Nigeria. *The journal of field actions*, Vol. (4): pp 228-320.

- Azahari, D.S. (2008). Indonesian rural women: The role in agricultural development. Analysis *Kebijakan pertanian journal*, Vol. (6): pp 1-10. Available from: <http://www.pse.litbang.deptan.go.id> [Accessed: 06 April 2014].
- Babbie, E. and Morton, J. (2010). *The practice of social research*. South Africa. Oxford University. PP.25-27.
- Beaulieu (1992). *Conducting a Community Needs Assessment: Primary Data Collection Techniques*. Gainesville: University of Florida. PP 4-17
- Berger, M., DeLancey, V., & Mellencamp, A. (1984). *Bridging the gender gap in agricultural extension*. Washington, DC: ICRW. Pp.220-225
- Bikaako, Winnie and Ssemkumba John. (2003). Gender, Land and Rights: Contemporary Contestations in Law, Policy and Practice in Uganda. In *Women and Land in Africa: Culture, Religion, and Realizing Women's Rights*. Wanyeki, L. Muthoni, (ed.) New York: Zed Books. pp 247-255.
- Brown, J. (2003). Rural women's land rights in Java, Indonesia: strengthened by family law, but weakened by land registration. *Pacific Rim Law and Policy Journal*, 12(3): 631-651.
- Buckingham A., Saunders P. (2004). *The Survey Methods Workbook: From Design to Analysis*. Rome, Italy. Policy publishers. PP.7-10
- Caleb and Kibet. (2011). *Major Challenges facing Kenyan Agricultural sector*. Nairobi Declaration on Agricultural Extension and Advisory Services. Nairobi, Kenya. PP 2-3
- Carr M. (1978) *Appropriate technology for African women*: African Training and Research Centre for Women, UN Economic Commission for Africa. Addis Ababa, Ethiopia. Pp.38-41

- Carter, K.A. & Beaulieu, L.J. (1992). *Conducting A Community Needs Assessment: Primary Data Collection Techniques*. Gainesville, FL:University of Florida. Retrieved from: <http://edis.ifas.ufl.edu/pdffiles/HE/HE06000.pdf> [February 2013]
- Coup A. and Schneider Z. (2007). Ethical and legal issues in research. In *Nursing & Midwifery Research: Methods and Appraisal for Evidence-Based Practice*. 3rd edn. Elsevier, Sydney, pp.80-101.
- Davison, J. (ed.) (1988). *'Agriculture, Women and Land: The African Experience'*. Boulder: West view Press. PP 26-28
- De Vos, A. S., Strydom, H. and Founche, C. B. 2005. *Research at grass roots*. Third edition. South Africa: Van Schaik Publishers.
- De vos,A.S.(1998). *Research at grassroots: A prime for caring profession*. Pretoria:South Africa.Van schaik. PP.36-4063-65
- Dommati Devender, Reddi Chittedi Krishna (2011), "Socio-Economic conditions of Agricultural Labour in Andhra Pradesh: A Case Study in Karimnagar District", *International Journal of Business Economics and Management Research*, Vol. 2, Issue 3 pp 115-118
- Duflo, E. and C. Udry. 2001. *Intrahousehold Resource Allocation in Cote d'Ivoire: Social Economics*, MIT, Cambridge, MA.PP.10-12
- Etenesh, B. (2005). Handout for Gender Issues and Youth work in agricultural Extension. Cited in Messay T., (2012). *An assessment on the role of women in agriculture in southern nation nationality people's region: the case of Halaba special Woreda, Ethiopia*. New Delhi, India.PP. 45-49
- Fabiya E. F., Danladi K. E. and Mohmood Y. (2007). *Role of women in agricultural development and their constraints: A case of Biliri local government area, Gombe State, Nigeria*.PP.696-699
- FAO (1994). *Women, agriculture and rural development, a synthesis report of the Africa region*. Rome.PP.499-502

- FAO (1997). *Improving women farmers' access to extension services*. Report by Janice Jiggins, R. K. Samanta, and Janice E. Olawoye. www.fao.org/sd/exdirect/EXan0039.htm [30 June 2013]
- FAO (1998). *Rural women and food security: current situation and perspectives*. Rome. PP.13-15
- FAO (2005). *The state of food security in the world. Eradicating world hunger –key to achieving the Millennium Development Goals*. Italy. PP.3-5
- FAO (2008). Forthcoming. *The State of Food Insecurity in the World*. Rome. Italy
- FAO (2011b) *Save and Grow - A policymaker's guide to the sustainable intensification of smallholder crop production*, available at <http://www.fao.org/docrep/014/i2215e/i2215e.pdf> [Accessed on 15th July 2014]
- FAO and UNESCO (2002). *Education for rural development in Asia experiences and policy lessons*. 5-7 November 2002 Bangkok, Thailand
- FAO (2011a) *The State of Food and Agriculture: Women in Agriculture – Closing the gender gap for development*, available at <http://www.fao.org/docrep/013/i2050e/i2050e.pdf>. 2010-2011 [Accessed on 9th July 2013]
- FAO, IFAD, and World Bank. (2009). Investing in women as Drivers of Agricultural Growth. *Gender in agriculture source book*. FAO, 2009b. How to Feed the World in 2050 - the special challenge for sub-Saharan Africa. Forum Background document. Rome 12-13 October 2009. Retrived from: www.fao.org/wsfs/forum2050/wsfs-backgrounddocuments/hlef-issues-briefs/en/ [Accessed on 12th October 2013]
- Fowler, J. (1988). *Survey research methods* (Revised edition). Newbury Park, CA: Sage Publications.
- Government of Kenya (2010). *Ministry of Gender, Children and Social Development Strategic Plan (2008-12)*: Friedrich Ebert Foundation. Nairobi. Kenya

- Gall, M. D., Borg, W. R., & Gall, J. P. (1996). *Educational Research* (6th ed.). White Plains, NY: Longman Publishers USA.
- Goodell G. 1984. Challenges to international pest management research and extension in the third world: Do we really want IPM to work? *Bull. Entomol. Soc. Am.* 30:18-26.
- Government of Kenya, (2010). *Agricultural sector development strategy 2010–2020*. Nairobi. Kenya
- Gundu, M. (2009). *The effective of literacy on access to and utilizing of agricultural information for household food security at Chirau communal lands in Zimbabwe*. Unpublished Master's thesis. University of Fort Hare. Department of information science
- Hoddinott, J. and L. Haddad. 1995. Does female income share influence household expenditure patterns? *Oxford Bulletin of Economics and Statistics*, Vol. 57(1): 77-96.
- Hoddinott, J., H. Alderman, and. Haddad, L., (1994). Intra household resource allocation: An overview. *Policy Research Working Paper 1225*. Washington, D.C.
- IEBC, (2013). *Boundary report*. Nairobi. Kenya
- IFAD (2000). *System-Wide Guidance on Household Food Security and Nutrition*. Administrative Committee on Coordination (ACC) Occasional Policy Papers pressure. Oxford. Oxford University press.
- IFAD. (2010). *Rural Poverty Report 2011 - New realities, new challenges: new opportunities for*
- Kadahl, I. (2008). "Go home and clear the conflict": human rights perspectives on gender and land in Tanzania. In B. Englert & E. Daley, eds. *Women's land rights and privatization in Eastern Africa*, pp. 40–60.
- John Bennet (1989), *the condition of Agricultural Growth: the economics of agrarian change under population pressure*. The University of Nebraska Press, PP. 41-79.

- Kabane, N. (2010). Being short changed: women and access to land in patriarchal societies. Available from: <http://www.afesis.org.za/local/governmanance/articles/being short changed women access to land in patriarchal-societies> [Accessed: 10 March 2013]
- Kabeer, Naila and HelziNoponen (2005): *Social and economic impacts of PRADAN's Self Help Group Microfinance and Livelihoods Promotion Program Analysis from Jharkhand, India*, Impact Working Paper, No. 11
- Karki, K. (2009). *Women in agriculture*. Available From: <http://www.articlesbase.com/womens-issues-articles/women-in-agriculture-962978.html> [Accessed: 15 March 2013]
- Kasente, D. (2003) 'Gender and Education in Uganda: A Case Study for EFA *Kebijakanperanian journal*, Vol. (6): pp 10.
- Kehler, J. (2001). Women and Poverty: The South African Experience. *Journal of International Women's Studies*, 3(1), 41-53.
- Kenya. (2009). Population Housing Census Highlights www.knbs.or.ke/census%20results. KNBS% 20 Bronchure.2010 [accessed on 30 May 2013]
- Lescroël, A. L.; Ballard, G.; Grémillet, D.; Authier, M.; Ainley, D. G. (2014). "Antarctic Climate Change: Extreme Events Disrupt Plastic Phenotypic Response in Adélie Penguins". In Descamps, Sébastien. pp 9
- Linda T. (1991). "Family work: Women's sense of fairness." *Journal of Family Issues*, 12, 181-196.
- Linda M (2005), Women's empowerment through sustainable micro finance: Rethinking best Practice <http://W.W.W.genfinance.Net>. [20 November 2013]
- Linda M. (2005), Women's empowerment through sustainable microfinance: Rethinking best Practice <http://W.W.W.genfinance.Net>. [Accessed on 1st August 2013]

- Manuh, T. (1998). Women in Africa's development: *Overcoming obstacles pushing for progress*. Nigeria. United Nations department of public information
- Mayoux, Linda and Maria Hartl (2009): *Gender Mainstreaming in Rural Finance – Reaching and Empowering Women: Guide for Practitioners*, IFAD Guide, Rome.
- Mayoux, L. (2009) Financial services for women's empowerment: Gender action learning system in market research and financial literacy. The Hague: women's empowerment. Mainstreaming and networking. Available from www.genfinance.info [Accessed on 2nd September 2014]
- Mbatiah, S. (2010). Journalism and Communication for Global Change: *A Brand New Constitution, But Can Women Enjoy Land Rights Society*. University Of Nairobi: Inter Press Service. Retrieved from <http://www.ipsnews.net> [20th April 2013]
- Mehta-Bhatt, P., Jarial, S. (2012). Recognizing the contribution of women in agriculture: ILRI
- Moock, P. (1976). The efficiency of women as farm managers: Kenya. *American Journal of Agricultural Economics: Proceedings Issue*, 58(5): 831-835.
- Moser, C.O.N. (1993). *Gender Planning and Development: Theory, Practice and Training*. London and New York. Routledge
- Mugenda, O. M. and Mugenda, A. G. (2008). *Research methods: quantitative and qualitative approaches*. Nairobi. Acts press
- Natural Resources Management and Environment Department. 2010. *Higher agricultural education and opportunities in rural development for women*. Available from: <http://www.foa.org> [Accessed: 02 June 2014].
- Ngechu, M. (2004). *Understanding the Research Process and Methods. An Introduction to Research Methods*. Nairobi: Acts Press
- Nigist, S. (2004). *Gender Mainstreaming*; World Vision London: Oxford University Press.

- Nzioki A., (2002). Towards Women's Equal Rights to land in Eastern Africa. East Africa Sub-Regional support Initiative for the Advancement of Women (EASSI). Cited in *Land Acquisition and use: Key factor for equity, equality and women empowerment in Africa-Uganda experience* Anumaka I.Kampala University.pp94-96
- Onam, J.A., Langat, J.K. and Nagigi, M.W. (2010). A comparison of male-female household headship and agricultural production in Kenya. *Jordan Journal of Agricultural Sciences*, Vol. 6, pp 601-603
- Onguono, C. N. (2009). *Women and socio-economic development in the local government system in Nigeria*. Nigeria. University of Nigeria Press.
- Overholt (1991). *Gender analysis in development planning: a case book*. West Hartford, CT: Kumarian Press.
- Penin, A. (1999). *The impact of education in small crop-holder crop production system*. South Africa. Agrekon publishers.Pp.12-14
- Quisumbing, A. R., and J. A. Maluccio. (2003). Resources at marriage and intra-household allocation: Evidence from Bangladesh, Ethiopia, Indonesia, and South Arica. *Oxford Bulletin of Economics and Statistics* 65 (3): 283-328.
- Rad, S. Ates , C. H. Delioglan, S. Polatoz, S. and Ozcomlekci, G. 2009. *Participation of rural women in sustainable development: demographic and socio-economic determinants*. Sustainable development. Turkey. John Wiley and sons Ltd and ERP environment. Available from: www.interscience.wiley.com [Accessed: 06 April 2014].
- Rahman S. A. (2004): Gender Differential in Labour Contribution and Productivity in Farm Production. Empirical Evidence from Kaduna State of Nigeria. *National Conference on Family: New Theatre Complex*. State University, Makurdi, Nigeria.

- Rahmeto D. (1989). *The mother and the breadwinner: The socio-economic role and status of Gumuz women*. Rutgers University: Available in <http://dnb-nb.de> date downloaded. [Accessed on 3 July 2013]
- Ravinder, R. and Narayana, N. (2007). *Gender Empowerment in Africa: An Analysis of Women Participation in Eritrean Economy*. International Journal of Women, Social Justice and Human Rights, Vol. (2): pp. 221-237. Available from: <http://ideas.repec.org/p/pramprapa/11081.html>. [Accessed 06 June 2013].
- Roshan L.khurana A., (2011). Gender issues: The role of women in agriculture sector. *Zenith International Journal of Business Economics & Management Research*. Vol.1.pp 19-23
- Schuler R., Anju M. and Carol B. (1997). "The influence of changing roles and status in Bangladesh's fertility transition: Evidence from a study of credit programs and contraceptive use." *World Development* 25(4). pp. 30-32
- Seshu, D. and Malavika D. (1989). The role of women in seed management with special reference to rice. 22. *IRTP Bulletin* (5)1-7.
- SOFA Team and Cheryl Doss (2011). *The role of women in agriculture*. ESA Working Paper No. 11-02. Food and Agric. Org. Agric. Devel.Econ. Division. pp 47-49.
- Songelwa, N. C. (2009). *A gender analysis of the land redistribution for agricultural development (LRAD) programme: A case study in Mpumalanga province*. Doctor of philosophy thesis. University of the Witwatersrand, Johannesburg.
- Tiruneh A. Tesfaye T. Mwangi W. and VerKuiji H. (2001). "Gender Differentials in Agricultural Production and Decision-Making among Smallholders in Ada, Lume, and Gimbichu Woredas of the Central Highlands of Ethiopia". Mexico, D.F.: International Maize and Wheat Improvement

- Centre (CIMMYT) and Ethiopian Agricultural Research Organization (EARO), pp 40-43
tomorrow's generation. IFAD, Rome.
- Dry, C. (2001). Gender, agricultural production and the theory of the household. *Journal of Political Economy*, 104(5): 1010–1045
- UN. (2009). the Millennium Development Goals Report 2009. New York, USA.
- USAID (2012). "Promoting Women in Cooperatives in Ethiopia: for Agricultural Value Chains Development." Report of Consultation held in Addis Ababa, January 25–26, 2012.
- Wanyeki, L. M. (2003). *Women, land and agriculture*. Cape Town: South Africa: David Philip
- Winrock, International Ethiopia (2001), *The Study of Appropriate Technologies Developed to Increase Women's Production and Productivity*. Ethiopia, Addis Ababa.
- WLSA, (2001), *A Critical Analysis of Women's Access to Land in the WLSA Countries: Women and Law in Southern Africa*. Research and Educational Trust, Harare. Pp.48-49
- Wolcott, H. (1995). *The Art of Fieldwork*. London. Altamira publications. Pp.56-58
- World Bank (2007). "Agriculture for Development: The Gender Dimensions." Agriculture for Development Policy Brief, World Bank, Washington, DC. Pp.127-129
- World Bank (2009). 'Peru Rural Road Program: Bringing Access to the Rural Poor', IBRD Results, World Bank, Washington, DC. Pp.13-15
- World Bank, FAO and IFAD (2009). *Gender in agriculture sourcebook*. Washington, DC, World Bank.
- Yin, R. (1993). *Applications of case study research*. Beverly Hills, CA: Sage Publishing. Pp.61-62

APPENDIX I: CONSENT SEEKING FORM

Greetings! My name is Judith Otieno, a Masters student in Gender and Development Studies at the University of Nairobi, Kenya. I am carrying out a study that seeks to find out how literacy, access and utilization of Agricultural Information impacts on household determine the role of women in agricultural production in Karachuonyo. Your participation and input will contribute greatly to the body of knowledge which may be used for any subsequent development initiatives aimed at enhancing food production and also alleviating household food security. Be guaranteed that the information collected from this interview will remain confidential and will be used solely for the purpose of this research. You are also informed that your responses are completely anonymous and that your participation in this study is entirely confidential and should you feel not comfortable to continue with any question, you are free to stop the interview. Further the results of this study will be shared with at your request at no cost at all to you. I therefore request your faithful participation.

Thank you!

Name.....Signature..... Date.....

**APPENDIX II: QUESTIONNAIRE ON THE INVISIBILITY OF KENYAN WOMEN IN
AGRICULTURE**

SECTION I: DEMOGRAPHIC OF THE RESPONDENTS

1. County Assembly.....
2. Sub-Location.....
3. Village.....
4. HH NO.....
5. QUESTIONNAIRE NO.....

6. Age	1)18 - 28	2)29-39	3)40 - 50	4)51 - 60
	5)60 - 70	6)71 - 80	7)80+	
7. No of Children aged less than 18 years of age	Males...	Female.....		
8. H/Size- How many people live in this household?	Male		Female	No. actually on the farm per week
	Less than 15 years			
	15-49 years			
	More than 49 years			
	1) Primary	2) O Level	3) A Level	4)Polytechnic

9. Highest level of education	5)University	6)Other (Specify		
10. Sex HH Head	1) male	2) female		
11. Sex Respondent	1) male	2) female		
12. Family type	1)polygamous	2) monogamous		
13. Marital status	Single	married	Divorced	Widowed
	Separated			

14 Are you the head of the household? (1) Yes (2) No

15. If the household head is female, what does your spouse do?

- 1) Co-farmer 2) work outside the village 3) work on other farms 4) Other (Specify)

16. Your role in the home may best be described as, **(you may select more than one)**

1) Farmer		3)Co-bread winner		4)Sole breadwinner	
2)Co- farmer		4)Sole breadwinner		5)Dependent	
6) Other (Specify)				

17.Do you have other economic activities outside farming?

- 1) Yes 2) no. If Yes specify

18. Do you have any specialized training in agriculture? 1) Yes 2) no

(b) If YES at which of the following level(s)? **(You may select more than one)**

1)University	3)Farmer Certification course	5)Short Course- seminar, workshop etc
--------------	-------------------------------------	--

4)School	6)Other (specify)	

SECTION II: PARTICIPATION IN AGRICULTURAL ACTIVITIES

19. Please specify the operations which you perform in crop production, Livestock production and other Household duties. Give answers on given scale in which 'Always' means you do that job many times during cropping season, 'Rarely' means you do that job few times during cropping season and 'Never' means you did not do this activity during cropping

ACTIVITY	Always []	Rarely []	Never []
Land preparation -Ploughing/ Bush clearing			
Sowing			
Manure application			
Crop protection- insecticide, pesticide, birds			
Weeding			
Transplanting			

Harvesting			
Post-harvest- threshing, winnowing, drying, storage			
Crop selling			
Home making- cooking, child care, water collection, fuel wood gathering, household maintenance			
Taking care of livestock /Cattle management/ grazing/ fodder collection			
Milking			
Poultry rearing			
Purchase/sell of farm implements			
Milk sale			
Sale of small ruminants – sheep & goats			
Sale of cattle			
Sale of chicken			
Sale of eggs			

20 To what extent do you participate in making decisions on the following agricultural production and marketing activities?

ACTIVITY	No consideration	Only consulted	Opinion Considered (I have equal say)	I always decide on my own	I am involved in decision making
Land preparation - Ploughing/ Bush clearing					
Land size for crop production					
Time of Sowing					
Time of manure application					
Time for crop protection- insecticide, pesticide, birds					
Time for weeding					
Time for transplanting					
Time for harvesting					
Time for threshing, winnowing and drying					
Amount and quantity of crop sale					
Farm credit					
No of hired laborers and their wages					

Land rent for seed production					
Poultry rearing					
Family Saving					
Purchase/sell of farm implements					
Milk sale					
Sale of small ruminants – sheep & goats					
Sale of cattle					
Sale of chicken					
Sale of eggs					
Utilization of money earned from agricultural activities					

SECTION III: ACCESS AND USE OF FARM INPUTS

21. Please indicate your household ownership and use of the following farm implements and other inputs during the 2013 cropping season. Also indicate in the last column whether the use was adequate.

ACTIVITY	Ownership (1) yes, (0) No	Use (1) yes, (0) No	Adequacy (1) yes, (0) No, if no explain

	Animal traction	Tractor	Male family labour	Female family labour	Child labour
Hand hoes					
Ox plough					
Rakes					
Slashers					
Sprayers					
Tractor					
Fertilizers					
Ploughing bulls/ cattle					
Pesticides					
Water pump					
Herbicides					
Knives					

SECTION IV: TIME ALLOCATED FOR AGRICULTURAL ACTIVITIES

22. What is the main source of labour for your farming activity in 2013?

1) Family labour only (2) Hired labour only (3) Family and hired labour (4) Family and shared labour

23. Please provide information on use of animal traction, tractor and labour by your household for crop production during 2013

ACTIVITY	Animal traction		Tractor		Male family labour		Female family labour		Children family labour	
	Own-Animal days	Total Hired anim al cost (Ksh s)	Own-Tractor days	Total Hired Tract or cost (Kshs)	Number of men	Number of women	Number of children	Number of days	Number of days	
Crop protection-insecticide, pesticide, birds					Land preparation - Ploughing/ Bush clearing					
Weeding					Sowing					
Transplanting					Manure application					
Harvesting										

Post-harvest- threshing, winnowing, drying, storage										
Crop selling										

24 Would you say that the times allocated in the table above was adequate for undertaking the agricultural activities?

SECTION V: NON-FARM INCOME

25. Did you get income other than from crop sales, animal and animal product sales in the year 2013? (Yes-1, No-0)

If yes indicate the source, amount and how you spent it

SOURCE	Amount (Kshs)	Spending -- indicate % spent on food, farm inputs, business, social events, household items like utensils, cloths etc,
Trade/ petty trade		
Casual/ wage labour		
Skilled labour		
Salaried employment		

Remittance		
Self-employment- handicrafts		
Gifts from friends, relatives, harambee contributions		
Humanitarian assistance from NGOs		

SECTION VI: ACCESS TO FARM SUPPORT SERVICES

26. Did you have access to any extension programmes in 2013?

0-No, 1-Yes. if yes, How many times [_____]

27. Have you attended farmer training in 2013?

0-No, 1-Yes If yes, how many times [_____]

28. Did you borrow 2013? (Yes-1, No-0), if yes provide more details in the table below;

SOURCE OF LOANS	Amount (Kshs)	Use Spending – indicate % spent on food, farm inputs, business, social events, household items like utensils, cloths etc,	Adequacy 1-sufficient; 0- not sufficient
Commercial bank			
MFI			
Friends			
Relatives			

Money lender/ shylock			
Co-operative			
Church			
Merry-Go-round			
AFC			
NGO			
Input store			
Neighbor			

29. Did you use any of the following technology during the 2013 main season in maize, sorghum, tomato, and sukuma wiki and beans production? Also indicate whether it was effective in crop production

Technology	Use 0-No, 1-Yes	Effectiveness 0-No, 1-Yes
Improved seed		
Crop rotation		
Row cropping		
Fertilizers		
Pesticides		
Herbicides		
Other (specify)		

SECTION VII: LAND RIGHTS & CUSTOMARY SYSTEMS

30. Did your household access land for farming in 2013?

1-Yes 2-No

31. What type of land did your household accessed for farming in 2013?

Land	Use 0-No, 1-Yes	Size ha	Effectiveness 0-No, 1-Yes	Under whose name is the land registered and certified?
Customary- inheritance				
Private				
Borrowed				
Rented				
Given for free				
Customary- marriage				
leasing				
Other specify				

SECTION VIII: AGRICULTURAL PRODUCTION

32. What major crops does your household grow?

33. What type of animals does your household keep?

34. Please specify crop production and income for 2013 production year

Crop	Total production (kg)	consumed (kg)	Sold (kg)	Price per kg	Total income
Maize					
Sorghum					
Millet					
Tomatoes					
Sukumawiki					
Water melon					
Beans					
peas					
Sesame					
Ground nuts					

SECTION IX: SOCIO-CULTURAL FACTORS THAT UNDERMINE THE ROLE OF WOMEN IN AGRICULTURAL PRODUCTION

35. Please specify whether each of the following factors undermines the role of women in agricultural production and if so to what extent?

FACTOR	Undermining the role of women agricultural production 0-No, 1-Yes	The extent ... 1-To a very small extent 2-To a small extent 3-Somewhat 4-To a large extent 5-To a very large extent
Few women holding of agricultural production resources such as land, animals, and machinery.		
Women perform all un-mechanized agricultural tasks and perform multiple tasks, which add more burden to them.		
Women earn fewer wage, especially in joint, informal and private sector.		
Women workers in agriculture suffer from high illiteracy rate among them and drop-out of schools		

Women do not know their legal rights.		
Miss applying some laws and regulations in favor of men such heritage legislation.		
Market inaccessibility		
Lack of technical information and knowledge		
High inputs costs		
Inadequate farm size		
Cultural biases and unfavorable traditional belief system		
Male dominant society		
Lack of Access to credit		
Lack of access to new technologies		
Lack of negotiation power, for entitlement rights		
Others specify...		
Others specify...		

APPENDIX III: KEY INFORMANT INTERVIEW GUIDE

1. How much is the awareness level of women concerning land's right and ownership?

A. High

B. Medium

C. Low

2. For Question No 1. If your answer is A/B/C Give brief Explanation

.....
.....
.....

3. What are the factors that contribute to unequal utilization of resources and low Participation of women in Agricultural activities as compared to men?

.....
.....
.....
.....

4. In your own opinion, what are the factors that contribute to invisibility of women in agricultural production?

.....
.....
.....

5. What type of activities are under taken by extension officers to empower women particularly by encouraging their participation in agricultural activity to increase productivity and to raise economic development?

.....
.....
.....
.....

6. What are the efforts exerted by the government to realize the decision making role of women in agricultural production?

7. Are there policies and strategies designed to empower women farmers economically?

A. Yes

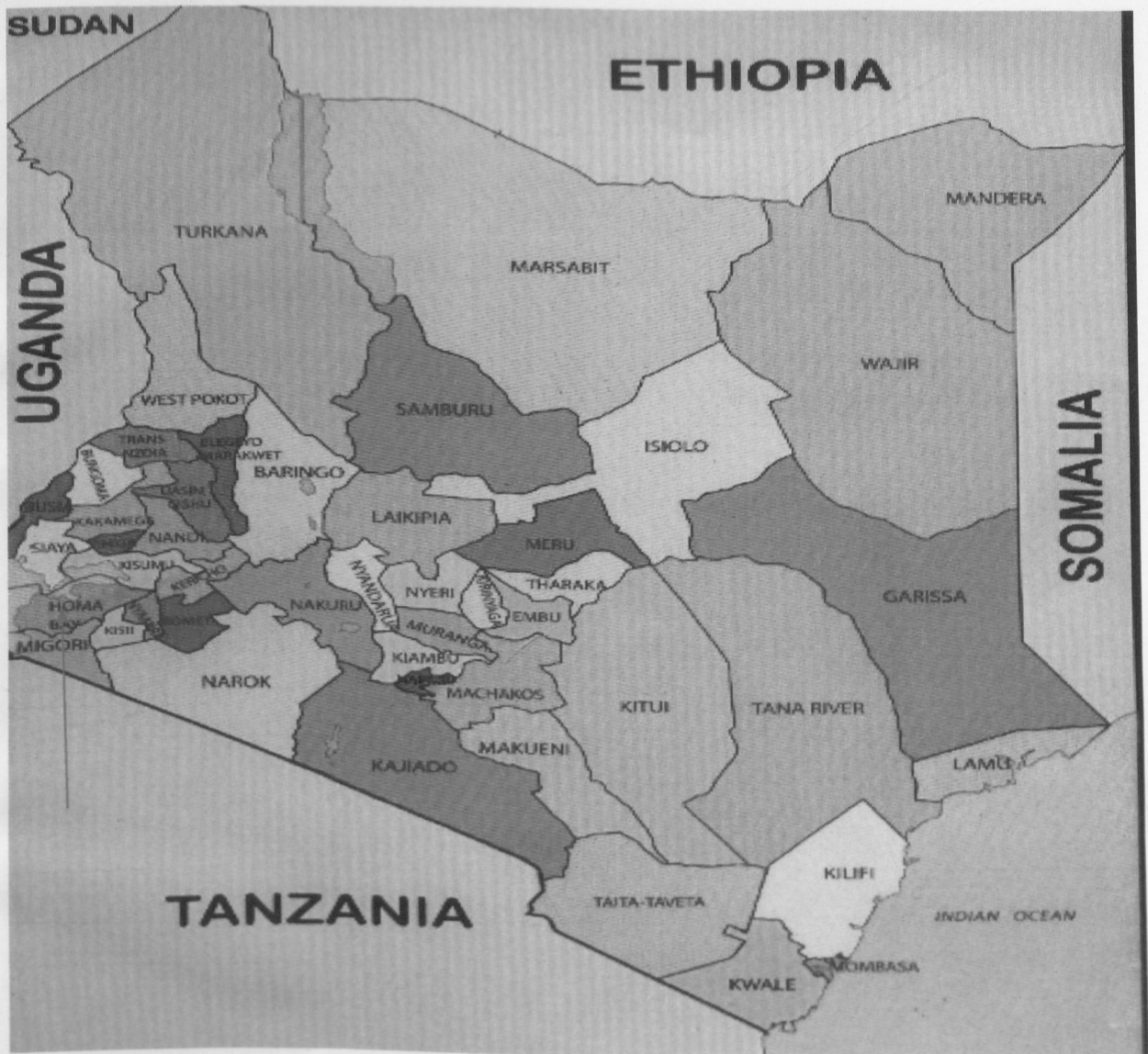
B. No

8. For Question No 6, If your answer is yes, mention the type and methods of implementation.

.....
.....
.....
.....

9. Suggest, what type of measures should be taken by the government and other stakeholders to increase women participation to play equal role with men particularly in agricultural production

APPENDIX IV: MAP OF KENYA INDICATING THE LOCATION OF HOMA-BAY COUNTY



Source: Softkenya.com