

**CHALLENGES FACING WOMEN IN HOUSEHOLD FOOD PRODUCTION IN
KIPIPIRI SUB-COUNTY, NYANDARUA COUNTY**

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**A PROJECT REPORT SUBMITTED TO THE INSTITUTE OF ANTHROPOLOGY
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REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN GENDER AND
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2016

DECLARATION

This project report is my original work and has not been submitted for examination in any other university for award of a degree.

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Date_____

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

Signature_____

Date _____

Prof. Isaac Nyamongo

DEDICATION

To my mother Catherine Ndung'u and my father Ndung'u Kariuki for the love, support and encouragement.

TABLE OF CONTENT

DECLARATION.....	ii
DEDICATION	iii
LIST OF FIGURES	vii
LIST OF TABLES	viii
LIST OF MAPS	ix
ACKNOWLEDGEMENT.....	x
ABSTRACT	x
LIST OF ABBREVIATIONS AND ACRONYMS	xii
1.1 INTRODUCTION	1
1.2 Problem statement	Error! Bookmark not defined.
1.3 Objectives of the study	Error! Bookmark not defined.
1.3.1 General objective	Error! Bookmark not defined.
1.3.2 Specific objectives	Error! Bookmark not defined.
1.4 Assumptions of the study	Error! Bookmark not defined.
1.5 Justification of the study	Error! Bookmark not defined.
1.6 Scope and limitations of the study	Error! Bookmark not defined.
1.7 Definition of terms	Error! Bookmark not defined.
2.0 LITERATURE REVIEW	7
2.1 Introduction	7
2.2 Household food production	Error! Bookmark not defined.
2.3 Role of women in household food production	Error! Bookmark not defined.
2.4 Socio-cultural challenges faced by women in household food production	Error!
Bookmark not defined.	
2.4.1 Gender division of roles and responsibilities	Error! Bookmark not defined.
2.4.2 Gender inequalities in land ownership	Error! Bookmark not defined.
2.4.3 Gender inequalities in ownership of livestock	Error! Bookmark not defined.
2.4.4 Household decision-making	Error! Bookmark not defined.
2.4.5 Household headship	Error! Bookmark not defined.

2.5 Economic challenges faced by women in household food production ..	Error! Bookmark not defined.
2.5.1 Access to financing and credit facilities	Error! Bookmark not defined.
2.5.2 Poverty	Error! Bookmark not defined.
2.5.3 Increase in costs of farm inputs	Error! Bookmark not defined.
2.6 Theoretical framework	Error! Bookmark not defined.
2.6.1 Harvard analytical framework	Error! Bookmark not defined.
2.6.2 Relevance of the theory to the study	Error! Bookmark not defined.
2.6.2 Conceptual framework	Error! Bookmark not defined.
3.0 METHODOLOGY	15
3.1 Introduction	15
3.2 Research site	Error! Bookmark not defined.
3.3 Research design	Error! Bookmark not defined.
3.4 Study population and unit of analysis	Error! Bookmark not defined.
3.5 Sample size and sampling procedure	Error! Bookmark not defined.
3.6 Data collection methods	Error! Bookmark not defined.
3.6.1 Survey	Error! Bookmark not defined.
3.6.2 Focus group discussions	Error! Bookmark not defined.
3.6.3 Key informant interviews	Error! Bookmark not defined.
3.7 Data processing and analysis	Error! Bookmark not defined.
3.8 Ethical considerations	Error! Bookmark not defined.
4.0 FINDINGS	20
4.1 Introduction	Error! Bookmark not defined.
4.2 Socio-demographic characteristics of respondents	Error! Bookmark not defined.
4.2.1 Age	Error! Bookmark not defined.
4.2.2 Marital Status	21
4.2.3 Household Headship	21
4.2.4 Level of Education	Error! Bookmark not defined.
4.2.5 Type of Agriculture	23
4.2 Role of women in household food production	24

4.3 Socio-Cultural Challenges Faced by Women in Household Food Production **Error!**
Bookmark not defined.

4.4 Economic challenges Faced by Women in Household Food Production **Error! Bookmark**
not defined.

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS	33
5.1 Introduction	Error! Bookmark not defined.
5.2 Discussion	Error! Bookmark not defined.
5.3 Conclusion	Error! Bookmark not defined.
5.4 Recommendations	Error! Bookmark not defined.
APPENDICES	Error! Bookmark not defined.
Appendix 1: Consent form	Error! Bookmark not defined.
Appendix 2: Survey questionnaire	Error! Bookmark not defined.
Appendix 3: Focus group discussions guide	51
Appendix 4: Key informant interview guide	52
Appendix 5: Research authorization letter.....	53
Appendix 6: Research permit.....	54

LIST OF FIGURES

Figure 2.1: Conceptual Framework.....	14
Figure 4.2: Highest Level of Education of the Respondents	23
Figure 4.3: Type of farming	24
Figure 4.4 Numbers of men and women that work for food production	25
Figure 4.5 Average numbers of hour's men per week and women work and activities done.....	26
Figure 4.6: Extent to which Women receive support from their husband in household food production.....	27
Figure 4.7 Other sources of income to supplement their farm food	32
Figure 4.8: Economic challenges facing Women in household food production	33

LIST OF TABLES

Table 3.1: Sampling matrix.....	17
Table 4.1 Distribution by Age Bracket	20
Table 4.2: Marital status.....	21
Table 4.3: Constraints of Participation of Women in Agriculture for Development.....	27

LIST OF MAPS

Figure 3.1: Map of Nyandarua County showing Wanjohi, Kipipiri and Geta
divisions in Kipipiri Sub-County. 16

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ABSTRACT

Women make a significant contribution in household food production. In developing countries, they have been reported to have very high workload in food production compared to men and in ownership to resources and decision making power they are often subordinate to men. This study aimed at exploring the socio-cultural and economic challenges facing women in household food production in Kipipiri Sub-County. A cross-sectional descriptive design combining of both qualitative and quantitative method was used to collect data from 100 women farmers in the sub-county. Quantitative data was collected through questionnaire administered to women farmers in Kipipiri Sub-County while qualitative data was collected through focus group discussions and key informant interviews. Result from the study showed that both men and women participated in agricultural activities but women spent more hours in the field than men. Women produced much of the labour required for food production and participated in all farm activities. Results from the study show that women face socio-cultural and economic barriers that limit their capacity for food production. The study revealed that culture did not allow women to own resources such as land or livestock, further more they were responsible for all the domestic work and this coupled with farm activities, the heavy workload limited their capacity for food production. In decision making, most decisions were made by husbands or fathers. Only women from single headed household indicated having made decisions alone. In addition women in the County reported that limited access to credit and increase in costs of farm inputs was a challenge to household food production. This was mostly due to lack of resources such as land that could be used as collateral to obtain credit. Poverty also limited their ability to purchase farm input such as fertilizer and to hire extra labour. Based on the findings, the study concludes that Gender inequalities throughout the chain of food production have impeded on the achievement of household food security in the Sub-County. The study recommends that interventions should target women and empower them in terms of education and capacity building as this will increase their decision making power and improve their security status.

LIST OF ABBREVIATIONS AND ACRONYMS

AWSC	-	African Women's Studies Centre
IAASTD	-	International Assessment of Agricultural Knowledge, Science and Technology for Development
IFAD	-	International Fund for Agricultural Development
KNBS	-	Kenya National Bureau of Statistics
NGOs	-	Non-Governmental Organizations
SSA	-	Sub-Saharan Africa
USAID	-	United States Agency for International Development
WB	-	World Bank
WFP	-	World Food Programme
WHO	-	World Health Organization
WID	-	Women in Development

1.1 INTRODUCTION

According to FAO (2012), food production refers to the practice of basic crop production, livestock production, food crop production, and food preparation and processing. Food production calls for the deployment of different assets, which include finance, land and labour. Women in developing nations have historically been concerned with production of food crop. A study done by FAO (2011), states that women in SSA contribute more than 60 per cent of labour required for household food production. While men are often charged with responsibilities encompassing clearing land, burning bushes and polishing, women's specialty and preserve is in transplanting, weeding, post-harvesting work and, in some cases, land preparations. Moreover, women play a key role in household animal production. They have primary duty to run the husbandry of ruminants and small animals. They also tend to large animals by way of providing them with water and feeds, general herding, cleaning sleeping pens and milking (FAO, 2012).

Reports by UNDP (2010) indicate that women living in rural areas across all developing regions are to a great extent less likely to own land or have the say on how to operate the land they cultivate. For instance, in Mexico, women make up for only 22.4 per cent of registered landholders in communal farming lands. In Kenya on the other hand, that figure declines to a paltry 5 per cent. In Pakistan it is less than 3 percent. In most cases, the land that women have access and control of is often in considerably smaller parcels, of poor quality, and frequently obtained through settlements negotiated through male relatives (FAO et al. 2010). On average, male-headed households operate more substantive agricultural landholdings than those headed by females in all countries (FAO, 2011).

It is of strategic significance for women to have control over land since it provides them with rights to make other necessary choices for their daily livelihood (Kabeer, 2012). For example, ownership to land would enable women to freely choose what foods to produce and how to produce them. This would enhance the welfare of their families. Landesa (2012), reports that an average of 60 per cent of malnutrition in children are recorded where women do not have land ownership rights. Data from the same report point to the fact that in situations where women directly control resources and assets it has resulted in a positive nutritional impact for their families.

Studies carried out in Kenya by AWSC and KNBS (2014) underpin the latter sentiments that women encounter many obstacles while producing food for their households. The study indicates that women face different forms of discrimination, such as greater reluctance on the part of input providers to lend credit for fertilizer purchases especially in households headed by females. Women are also exposed to fewer opportunities to borrow money or even to buy food on credit. The study shows that although 48% of women operate businesses, they only receive 7% of formal credit due to limited or restricted access to land which they would otherwise use as collateral to source for credit. Similarly, studies conducted by Dillon and Quiñones (2010) show that in Nigeria, just a paltry 5 percent of females is able to access formal credit.

Women also face constraints in access to income which is crucial for household food production. This is because most of them are unemployed or dominate informal jobs where they are underpaid (Blackden and Woden, 2006). According to Hossain and Green (2011), the income that women earn in wages from farm and non-farm employment and from other income-generating ventures is of particular significance for rural households. This emanates

from the fact their purchasing power can not only be used to purchase food for their families but also to pay for farm inputs, thus improving food production for their households.

1.2 Problem statement

Though women provide up to 80% of the labour required in agriculture for household food production, they face difficulties when it comes to ownership of productive resources such as finance, land, credit and productivity-enhancing inputs and services as compared to men (FAO, 2012). These challenges are a product of a number of interconnected socio-cultural and economic factors that force them to play diminished roles to the peril of their own advancement and that of their families at household level (Kabeer, 2012).

A study by African Women Studies Centre and KNBS (2014) on women's experience in food security in Kenya show that women contribute much of the labour in agricultural production with limited accessibility to resources such as labour, land, fertilizer, finance and income. Whereas studies by FAO (2012) indicate that women are deeply entrenched in all spheres of agricultural production, there is little detailed focus on household food production. Further, none of the studies has focused on Kipipiri Sub-County where according to Nyandarua County Government report (2015), 27% of the households experience food insecurity every year. This is a reflection of challenges households may be having in food production. Given that women contribute a great deal in agricultural production (AWSC and KNBS 2014; FAO, 2012), this study, therefore, seek to explore the challenges facing women in household food production in Kipipiri Sub-County. The study specifically set out to answer the following questions:

- i. What are the socio-cultural barriers to women's household food production in Kipipiri Sub -County?

- ii. What are the economic barriers to women's household food production in that Sub-County?

1.3 Objectives of the study

1.3.1 General objective

To explore the socio-cultural and economic challenges facing women in household food production in Kipipiri Sub-County.

1.3.2 Specific objectives

1. To determine the socio-cultural barriers to women's household food production in Kipipiri Sub-County.
2. To determine the economic barriers to women's household food production in that Sub-County.

1.4 Assumptions of the study

1. Socio-cultural factors affect women in household food production in Kipipiri Sub-County.
2. Economic factors affect women in household food production in Kipipiri Sub-County.

1.5 Justification of the study

There is a dearth of knowledge regarding the challenges women in Kipipiri sub-county face in agricultural household food production. The findings from this study have filled in this gap in knowledge and can contribute to the design of focused programmes to help facilitate women's participation in household food production. Further, the findings have contributed to the field

of academia and provided a basis for further research in gender development studies. The study has given recommendations to the major stakeholders like the national and county governments on viable means of realizing contribution of women in agriculture. The findings of the study have shed light on constraints that women encounter in household food production and how those challenges can be addressed by the national and county governments. The findings of this study therefore, may change the agricultural policy that at the moment do not address the needs of women and make it more gender -aware.

1.6 Scope and limitations of the study

The study examined the challenges facing women in household food production in Kipipiri Sub-County. It specifically looked at socio-cultural and economic challenges facing women in household food production; thus challenges affecting women in commercial production of food were beyond this scope. The study used a cross sectional research design which was a limitation since the researcher only gathered information at one point in time. A longitudinal study would overcome this limitation but time and resources allowed the researcher to employ cross sectional study design.

1.7 Definition of terms

Challenges: In this study are socio-cultural and economic elements that stand in the way of an individual being able to produce food for their household.

Household: a basic unit of persons, who live in the same home and share income, expenses and tasks.

Household food production: includes the activities done by men and women which contribute to food security at household level.

Food security: Is the situation whereby individuals have access to adequate, nutritious and safe food that satisfies their dietary and ensure healthy life.

Socio-cultural factors: in this study refer to customs, norms and values that influence individual ownership to resources.

Gender: Refers to roles of men and women as dictated by culture.

Gender inequalities: This refers to inequitable enjoyment of socially valued goods, services, opportunities, resources and benefits by women and men.

Access to land: The ability to own a land title.

2.0 LITERATURE REVIEW

2.1 Introduction

This Chapter presents literature review on challenges facing women in household food production. The review is presented along the following sub-topics: household food production, women's role in household food production, socio-cultural challenges and economic challenges to household food production. The section concludes by discussing the theoretical framework that guided the study.

2.2 Household food production

According to Koopman (2012), adequate food production is necessary for household food security. Food production entails land use, soil management, crop management, livestock breeding and harvesting. It also comprises of post-harvest activities and marketing of surplus produce. In addition, are activities related to food utilization and consumption that is, preparation, processing and cooking of food at household level.

2.3 Role of women in household food production

Rural women have a significant contribution in household food production. They often spend more of their time in farms and are the major producers and processors of family food. Mehra and Rojas (2008), argue that women often cultivate food for subsistence as well as commercial crops alongside the men. In areas where women and men grow different crops in separate plots, women are usually engaged in food crop to cater for food for the family members while men produce cash crops (Doss, 2009). Studies done by Köhler-Rollefson (2012) indicate that women not only spend more hours in farms but also work more hours in productive activities than men. Similarly, studies conducted in Mbeya region of Tanzania, found that women worked 5-6 hours more than men with no resting period. Other than farm activities, women were responsible for caring for the children and the old and sick members of the family (Mehra and Rojas, 2008).

2.4 Socio-cultural challenges faced by women in household food production

Women in Sub-Saharan Africa contribute significantly in household food production. However, their efforts are constrained by inequalities in terms of ownership and control of productive

resources (Kabeer, 2012). These social and cultural challenges include access to land, gender division of responsibilities, household headship, decision-making power as well as ownership to livestock (Sweetman, 2012).

2.4.1 Gender division of roles and responsibilities

In most SSA, often, there is a rigid gender division of roles which are informed by patriarchal norms. These divisions of labour dictates that women should perform care work as well as provide labor for household food production, while men are required to provide labour for the cash crops (Quisumbing and Pandolfelli, 2010). While women are not only required to perform domestic work and food production, they are also needed to produce cash crop alongside men (Kabeer, 2012). In most cultures, activities, such as ploughing and spraying are specifically done by men. This is a challenge to female headed household since they lack the male relative to perform those tasks. This results in delays in some farm activities which are traditionally meant for men and this leads to losses in output (Tiruneh et al., 2001).

2.4.2 Gender inequalities in land ownership

Land ownership and usage rights are crucial in household food production. Chanza (2011) argue that having land right empowers women to make decisions regarding land use. In many developing country's women do not own land; when they do, often are smaller plots of lower quality. For example, in Kenya, the average number of men who own land is three times more than that of women. Similarly in Bangladesh and Pakistan men landholdings is double the size of women's (FAO, 2011; Razavi, 2007). These inequalities significantly affect food security at household and community level and women's full capacity in household food production as they feel less inclined to invest in the land (Kabane, 2012).

2.4.3 Gender inequalities in ownership of livestock

Ownership to livestock plays a key role in household food production in rural areas. According to FAO (2011), livestock are an important factor in food security. They ensure direct access of meat, milk, eggs and also are a source of income. In addition, livestock provide manure which increases farm yields and are also used as a source of labour for ploughing (Kassie et al. 2012).

For livestock to contribute to food security, various factors come in play. These factors include; Women's ownership to livestock, ability of women to decide on the use of livestock, their products and the income generated from these livestock and ability to control income obtained from the sale of animal product (Quisumbing and Pandolfelli, 2010).

Evidence for livestock holdings across developing countries indicates that there exist gender inequalities in ownership of these assets (Dillon and Quiñones, 2010). Gender inequality in livestock ownership is acute in most African countries where studies have shown that households headed by men have larger livestock holdings compared to female-headed households (Köhler-Rollefson, 2012)..

Studies done by FAO (2014) reports that man generally own high valuable animals while women control smaller animals which fetch smaller income (FAO, 2010). A study by AWSC and KNBS (2014) found that high value livestock such as cows, horses, donkeys and goats were owned by men while chicken, always regarded as birds, culturally belonged to women. Even in situations where women owned large animals jointly with men, women did not have access to income obtained from the sales of the animal products. This proves to be a hindrance to women's access to cash, and this interferes with household food productivity.

2.4.4. Household decision-making

Women's ability to make decisions over household resources is important for household food production. This is because women are observed and reported to spend more of their time and income to provide food for their households and to invest in children's education and health than men (Mutangadura, 2004). Several studies in developing countries have pointed out that men dominate the household decision-making power in most places while women have subordinate positions (Köhler-Rollefson, 2012). For example, in Nepal men are culturally the decision-makers in the household. This is because the community is patriarchal and so the husband usually shows supremacy, especially in decision-making. Similarly, in Gambia the women reported lack of decision-making as one factor that hinders their ability in household food production (Mutangadura, 2004). According to AWSC and KNBS (2014), denial of equal property rights limits women's decision on how to use the land. In male-headed household's

women do not have a say on how land allocation is done. They are mostly allocated small portion to grow food crop while the rest is dedicated for cash crop.

2.4.5 Household headship

In most developing countries, numbers of female headed household has been on increase over the last few years. Most of these women depend on agriculture to sustain their families (FAO, 2011). Recent studies have shown that such households face challenges resulting from various inequalities including lack of employment and other income generating opportunities and lack of male family members who can be an extra source of labour (FAO, 2011). Similarly, Saito (2014) argue that female-headed households are more constrained since they have fewer members and have more family members depending on their care particularly the old and the sick family members. Furthermore, they lack sufficient income that could be used for hiring in labour due to lower levels of employment (ADB, 2013).

Studies done in Kenya by Ouma et al. (2006) show those female-headed households rarely adopt technology or plant high quality seeds. This is as result of limited access to credit and lower education levels that limit their capacity.

2.5 Economic challenges faced by women in household food production

Access to credit is an important factor for food production and security at household level. In in many SSA, women have limited financial capital and credit that could boost their lives and those of their families (IAASTD, 2009).

This is mostly due to inequalities in ownership of land which limit women farmers' access to credit as they are required to produce tittle deed as collateral. Furthermore women are always discriminated in terms of employment and are therefore, unable to obtain income which could facilitate their food productivity (Copeland and Guertin, 2013).

2.5.1 Access to financing and credit facilities

In most SSA African countries, customary laws deny them land rights. As a result, women cannot provide collateral used to obtain credit (Potts, 2012). This has an impact on household

food production as women are not able to purchase farm inputs or adopt new agricultural techniques that would boost their farm yields (IAASTD, 2009).

FAO (2012), report that female farmers have lower access to credit compared to their male counterpart. In Nigeria, for example, the number of females who are able to obtain formal credit is only 5 per cent while in Kenya, 4 per cent female farmers are able to obtain credit. In Uganda, only one percent of women are able to obtain credit in rural areas (Doss, 2010). Improved access to credit implies access to resources hence improved household food production (Ellis et al. 2006).

2.5.2 Poverty

According to Hossain and Green, (2011), more than a half of world's population lives in absolute poverty. A great number of this population consists of women who depend entirely on agriculture as a mean of livelihood. Gender inequality in access to productive resources, unemployment and women workload has seriously restricted women's capacity to participate in agriculture (Potts, 2012). Further, female workers are less organized in unions and are not able to bargain for a higher wages for fear of losing the job and so they persevere. Thus, with lower pay and with increasing needs at the household level, women especially those heading households find themselves stuck in poverty (AWSC and KNBS, 2014).

2.5.3 Increase in costs of farm inputs

Improved varieties of seed, fertilizers, organic inputs and conservation investments, are crucial in realizing higher yields among rural households (Tiruneh et al. 2001). However, increase in prices of these inputs has created a great burden for women who are the major labour producers for household food production. According to Ellis et al. (2006), women in SSA countries often cannot afford to buy farm input since majority of them lack access to income and credit (Rabaar, 2009). Studies from Kenya show that women, especially those heading households, are less likely to use technology, high quality seeds and fertilizers. This is mostly due lack of ownership to land which can be used as collateral to obtain loan and credit (Ouma et al. 2006). Furthermore, they lack access to extension services which means that they are not able to access

services such as seed and credit which is provided through extension services (Minot et al., 2000).

2.6 Theoretical framework

2.6.1 Harvard analytical framework

This study was guided by the Harvard analytical framework. This framework was started by researchers at the Harvard Institute for International Development in the USA working in together with Women in Development office of USAID to demonstrate that it is economically important to allocate resources to both men and women. Harvard analytical framework emphasizes on adequate collection of data at individual level and household level. The framework consist of three components of collecting data namely: an activity profile, an access and control profile and a list of influencing factors. Activity profile involves collecting data on individual's activities which are classified as either "reproductive" or "productive" roles, and how those activities relate to access and control of income and resources (Ellis et al., 2006). An access and control profile looks at the access that individuals have to resources for conducting their activities and the control they have of the benefits derived from these activities (Kattumuri, 2011). Influencing factors refer to those factors that shape gender relations and bring about the differences in the division of responsibilities, access, and control over resources and benefits, for instance, economic, socio-cultural, and educational factors. According to Ellis et al. (2006), past and present factors that have an influence on men and women must be identified in order to provide a way forward to address the access and ownership to resources.

2.6.2 Relevance of the theory to the study

The framework argues that men and women needs should be taken into account to ensure economic efficiency. It maps out the contribution in household food production by indicating who does what by gender, age and within which hours. Women's significant contribution to household food production is constrained by unequal access and ownership of resources. Ownership and control over land among others is a major setback for women ability to contribute in household food production. Culturally, land is owned by men and women only access land through male relatives. Furthermore, they lack autonomy on how to use the land or control the income obtained from the sales of farm produce since important decisions are made

by those who own the land. For women to fully contribute in food production, productive resources need to be available to them in terms of ownership and control.

Women face greater constraints with regard to participation in cooperatives in rural areas and in access to credit and other services. These challenges mainly are due to socio-cultural practices and stereotypes around the role of women within the family and community level and also from socio-economic factors which limit their access to credit, and formal employment. It is important to take into account social and economic factors while addressing constraints that face women in household food production.

2.6.2 Conceptual framework

The conceptualization of this study is that the interaction between socio-cultural and economic factors has affected women household food production in Kipipiri Sub-County. In this study, social cultural factors and economic factors form the independent variables of the study while women household food production forms the dependent variable. In an ideal world, social cultural factors and economic factors are expected to positively impact women household food production. However, this could also be a source of challenges for women household food production. This relationship of variables is presented in a conceptual framework as shown in Figure 2.1.

Independent Variables

Dependent Variables

Activity Profile

- Cultivating
- Planting
- Weeding
- Tending to animals
- Harvesting
- Distribution of surplus produce

Access and control profile

- Access to land
- Livestock ownership
- Decision-making power
- Gender division of responsibilities
- Household headship
- Access to credit and finances
- Cost of farm inputs
- Poverty

Lists of influencing factors

- Economic and social cultural context

Household food production

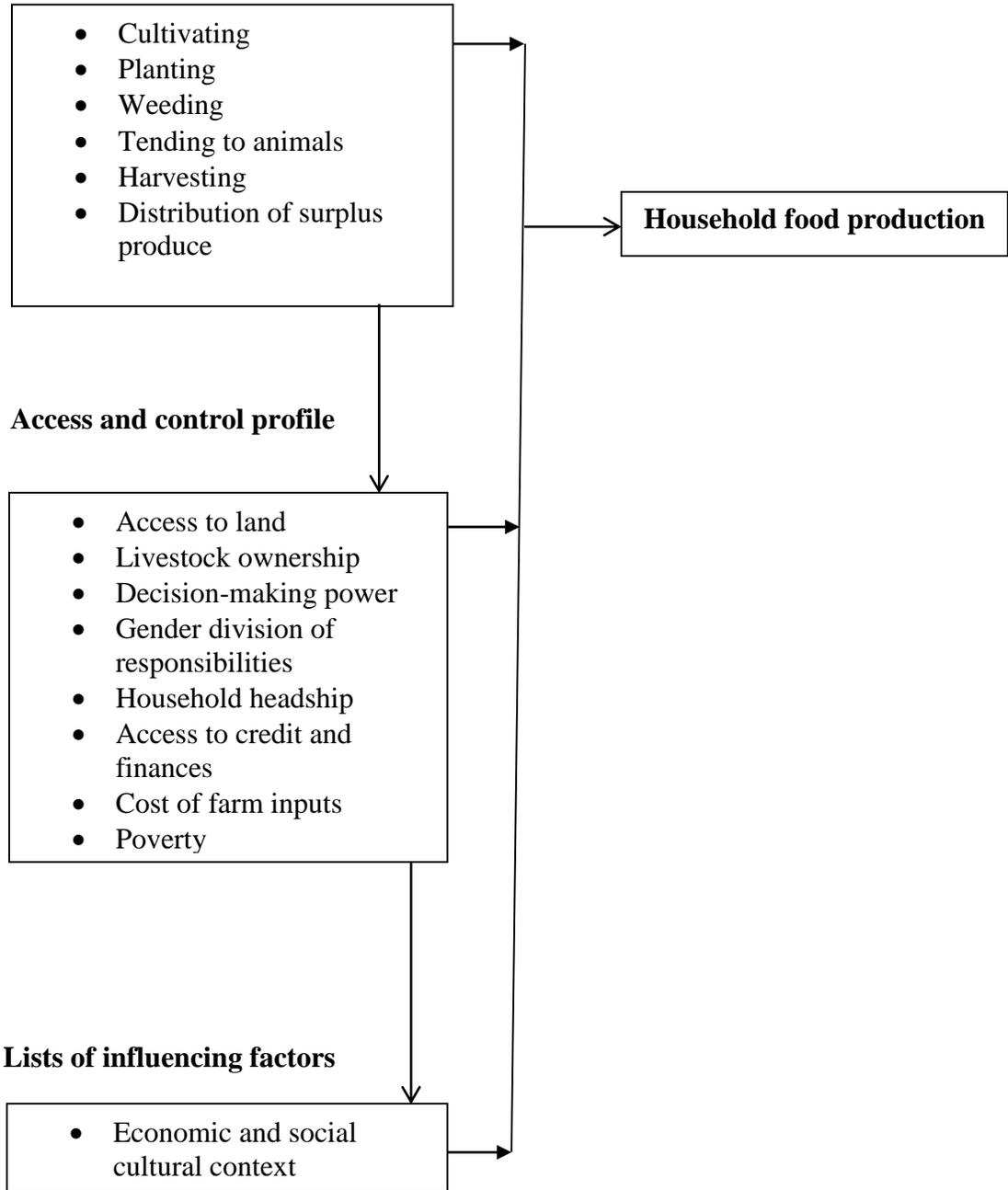


Figure 2.1: Conceptual Framework

3.0 METHODOLOGY

3.1 Introduction

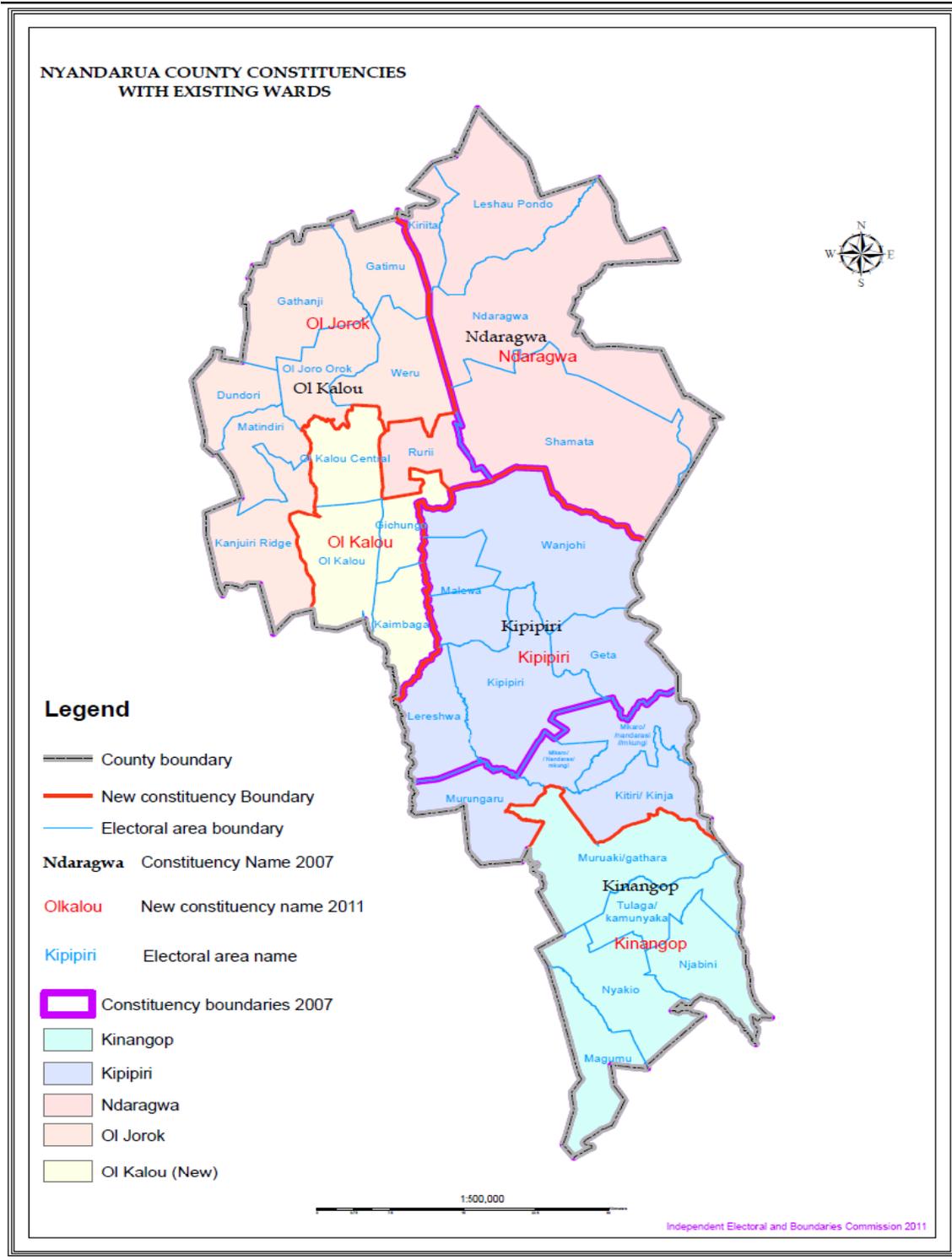
The site of the study, methodology of the study, the study design and the study population are described in this chapter. The chapter also describes the sampling procedure, sample size, data collection methods and data analysis techniques. Finally the chapter discusses ethical considerations that guided the study.

3.2 Research site

Kipipiri Sub-County is one of the 5 Sub-Counties in Nyandarua County with an area of 543.7 square kilometers. It borders Ndaragua to the North, Olkalou to the West and Kinangop Sub-County to the South. As indicated in Map 3.1, Kipiriri Sub-County is further divided into 3 divisions, namely, Kipipiri, Wanjohi and Geta. It has a total population of 94,820 with 48,757 females and 46,063 males (KNBS, 2010).

About 83.1 per cent of the total population is involved in agriculture as a means of its livelihood. The main agricultural activities are growing of crops and animal keeping. Among the crops grown include maize, beans, potatoes and vegetables. These crops are not exclusively used for subsistence purposes as they also sold in market for income. Dairy farming is also presiding enterprise in the livestock subsector (Nyandarua County Government, 2015).

Although women in Kipipiri Sub-County provide much of the labour required for household food production, their household are still experiencing food insecurity. Reports from Nyandarua County Government (2015) indicate that around 27 percent of the households are food insecure.



Map 3.1: Map of Nyandarua County showing Wanjohi, Kipipiri and Geta Divisions in Kipipiri Sub-County

Source: Nyandarua County Government (2015)

3.3 Research design

This study used cross-sectional descriptive study combining both qualitative and quantitative data collection methods. Quantitative data were collected through questionnaire administered to women farmers in Kipipiri Sub-County. Qualitative data were collected through key informant interviews and focus group discussions. Quantitative data were analysed using descriptive and inferential statistics and presented in charts and frequency tables. Qualitative data from FGDs and key informants were transcribed and coded. It were analysed thematically in line with the study objectives. Verbatim quotes were used to amplify the voices of the informants.

3.4 Study population and unit of analysis

The population of the study comprised of women farmers in rural households of Kipipiri Sub-County. The unit of analysis was the individual woman farmer.

3.5 Sample size and sampling procedure

The study targeted 100 respondents who were randomly picked through the formula below

$$n = Z^2pq / d^2,$$

Where:

n = required sample size

p= 1-q (variance expected in the responses assumed to be 50:50 proportion rate).

Z = Z score value at 95% confidence level (standard value of 1.96)

q = Estimated responses.

d = Level of precision or margin of error at +-10% (standard value of 0.1).

$$n = \frac{z^2pq}{d^2} = [1.96^2(0.5*0.5)] / [0.1^2] = 96$$

The sample was rounded off to a 100. Stratified sampling was used to select the respondents. Proportionate to size sample was obtained from the 3 divisions in Kipipiri Sub-County which are Geta, Wanjohi and Kipipiri.

Table 3.1: Sampling matrix

Ward	Population of women	Sample
Kipipiri	11,563	25
Wanjohi	16,446	34
Geta	20,748	41
Total	48,757	100

3.6 Data collection methods

3.6.1 Survey

Researcher with the help of research assistant administered a questionnaire (Appendix 2) to the 100 respondents. The information obtained was on demographic information of the respondents such as age, source of income, marital status and family household head. The information on role played by women in household food production, social cultural challenges that women face in food production as well as the economic challenges that women faced in household food production was also obtained.

3.6.2 Focus group discussions

The groups consisted of 6-12 participants. The researcher conducted 3 focus group discussions with women farmers who belonged to registered women farmers groups in Kipipiri Sub-county. The purpose was to obtain collective information on the role of women in food production at household level, constrains they face and the way forward to address those challenges. A FGD guide (Appendix 3) was used to collect data.

3.6.3 Key informant interviews

These interviews were conducted with three chairpersons of registered women groups, an official of the Women Enterprise Fund (WEF), the Agricultural Officer, Kipipiri Sub-County,

and a representative from an NGO that promotes agricultural household food production in Kipipiri Sub-County. The key informants provided information on socio-cultural and economic challenges facing women in household food production. A key informant interview guide (Appendix 4) was used to collect data.

3.7 Data processing and analysis

Qualitative data was transcribed and coded. It was analysed in line with the main theme from the study objective. Quantitative data was analysed using descriptive statistics such as frequencies, percentages, and mean scores.

3.8 Ethical considerations

Informed consent was obtained from the participants using a consent form (Appendix 1). The researcher explained to the respondents that their participation was voluntary and that they were free to withdraw whenever they deem fit. The respondents were also assured that their privacy was protected by strict standard of anonymity where pseudo-names and coding of participants information was used. The researcher ensured that all the sources of information were properly quoted and acknowledged in the study body and a list of bibliography in respect to the same given in the reference section.

4.0 FINDINGS

4.1 Introduction

This chapter presents the findings of the study on the challenges facing women in household food production in Kipipiri Sub-County of Nyandarua County. Information relating to socio-demographic of respondents, the role of women in household food production, socio-cultural and economic challenges that women face in household food production and the way forward to address those challenges. The survey questionnaire was administered to 100 women farmers. The researcher assisted by research assistant administered the questionnaires.

The study also collected data from four key informant interviews and three (3) focus group discussions. This latter two, provided additional information on challenges facing women in household food production.

4.2 Socio-demographic characteristics of respondents

This chapter presents socio-demographic information of the respondents: namely age, marital status, household headship, education level and the type of farming practiced.

4.2.1 Age

As summarized in the Table 4.1, majority of the respondents 54%, were in the age group of between 40-59years while 26% of the respondents aged between 20-39 years. Respondents who were aged 60 years and above accounted for 18% while 2% of the respondents were in the age bracket of 20 years and below

Table 4.1 Distribution by Age Bracket

Age in years	Frequency	Percent
Below 20 years	2	2
20-39 years	26	26
40-59 years	54	54
60 years and above	18	18
Total	100	100

4.2.2 Marital Status

Majority of the respondents were married accounting for 79%, 11% were widowed, while 7% were single. Only 3% of the respondents were divorced. This is shown in Table 4.2 below.

Table 4.2: Marital status

Marital Status	Frequency	Percent
Single	7	7
Married	79	79
Widowed	11	11
Divorced	3	3
Total	100	100.0

4.2.3 Household Headship

As presented in Figure 4.1, study shows that majority of the women 76% were in households headed by men (Husbands) while 20% of the households were headed by women. Only 4% of the households were headed by siblings. This is an indication that in Kipipiri Sub-county, men are the authority figures who dominate leadership; thus the community is patriarchal. In the situation where women headed the households, they were mostly single, widowed or divorced. Siblings headed the households in situations where the parents had died or were not living with them.

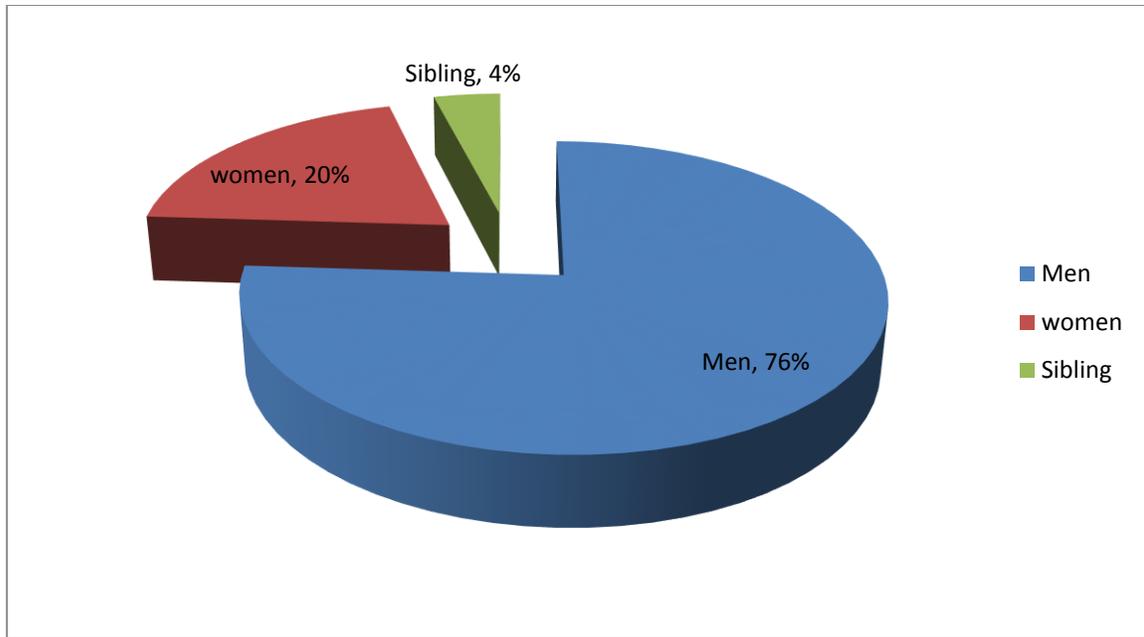


Figure 4.1: Household Headship

4.2.4 Level of Education

The levels of education as indicated by respondents are presented in the figure 4.2 below. Majority of the respondents in the area, accounting for 42%, had completed secondary education, while 30% had completed primary education. 8% of the respondents had completed tertiary education while 20% did not have any education.

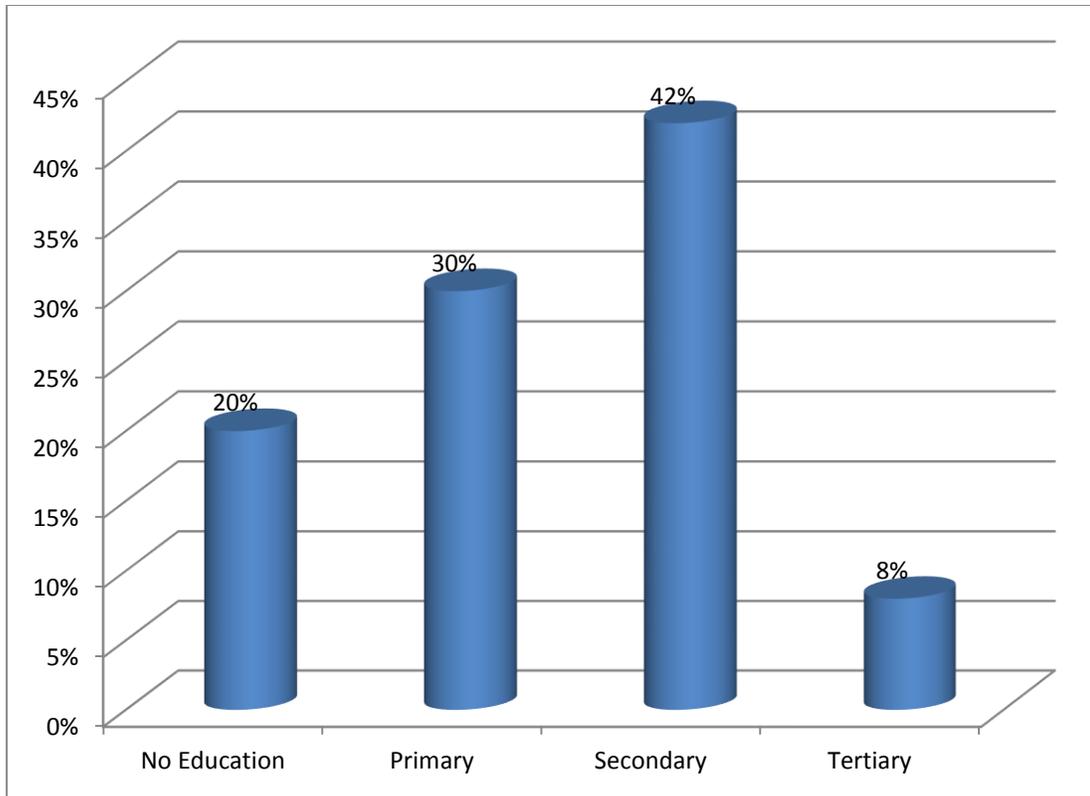


Figure 4.2: Highest Level of Education of the Respondents

4.2.5 Type of Agriculture

As indicated in Figure 4.3, majority of the respondents, 75% were involved in mixed farming. They kept animals such as goats, cattle, donkeys, rabbit and reared sheep and poultry. They also cultivated crops mostly for home use. However, they indicated that they sold surplus produce to the market. This was summarized one of the respondent who said, *“We produce food for home use. We can only sell what is left after our families are well fed”* [Survey, 32yrs, Wanjohi]. 10% of the respondents were involved in livestock rearing only while 15% of the respondents were involved only in food crop production. The results from the study point to the fact that most women farmers in Kipipiri Sub-County are involved in mixed farming where they keep animals and cultivate crop.

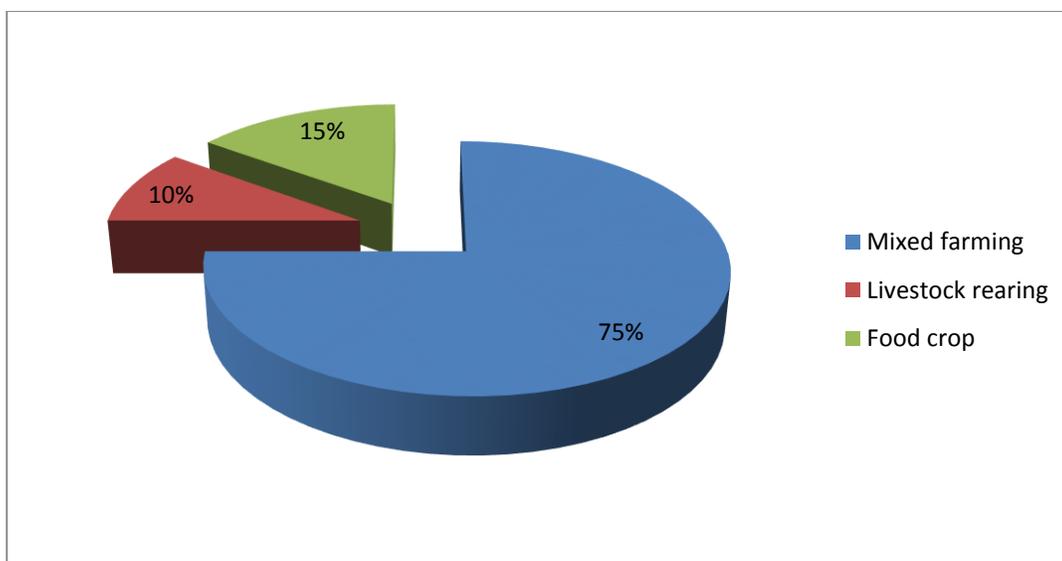


Figure 4.3: Type of farming

4.2 Role of women in household food production

The respondent indicated the number of men and women that worked on their farms for household food production. They also indicate the average number of hours each person works and activities done on a daily basis in the scale of 1-5, where the value of 1 meant '0 hours', 2 was equivalent to '1-3 hours', 3 represented '4-6 hours', 4 meant '7-9 'hours while 5 meant '9 hours and above'. As shown in the Figure 4.4, 54% of the households consisted of 5-7 members, 31% of the households recorded 8-10 members while 15% of the household consisted of between 2-4 members.

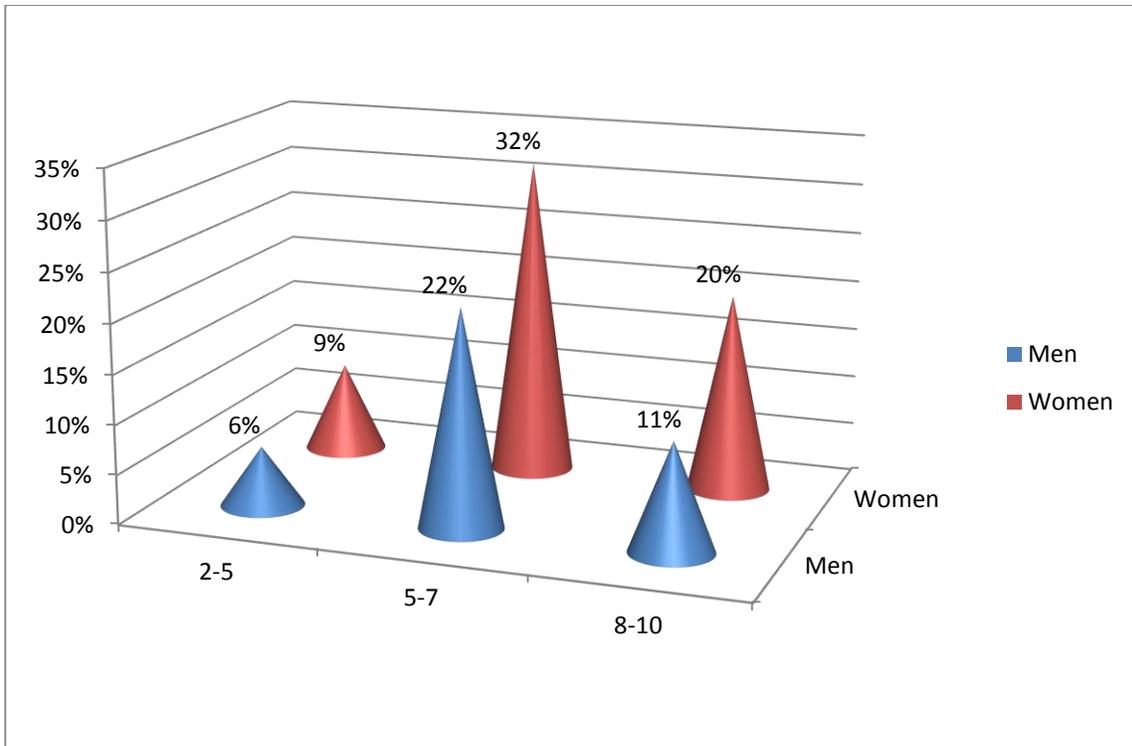


Figure 4.4 Numbers of men and women that work for food production

Though most of the activities were done by both men and women, as summarized in the Figure 4.5, the data showed that women worked longer in most activities than their male counterparts. Secondly, the data points to some degree of gender differentiation in activities. Both men and women were engaged in land clearing and ploughing although it was regarded more of man's work. Most of the households indicated that men spent more time approximately 9 hours in land clearing and ploughing compared to women who were reported to have spent between 5-7 hours. In planting, women were reported to be actively involved and spent about 9 hours. Men were reported to have spent 1-3 hours in the same activity. In the work of weeding, which is very long and tiring activity it was reported that women dominate, working 9 hours and above while men were less involved spending maximum of 4-6 hours. It was reported that men were less involved in crops such as vegetables as it is considered women's crop in the area. In

activities such as harvesting, women spent 9 hours and above while men worked for a maximum of 1-3 hours a day. Cumulatively, women spent 39 hours per week compared to men who spent a maximum of 30 hours per week.

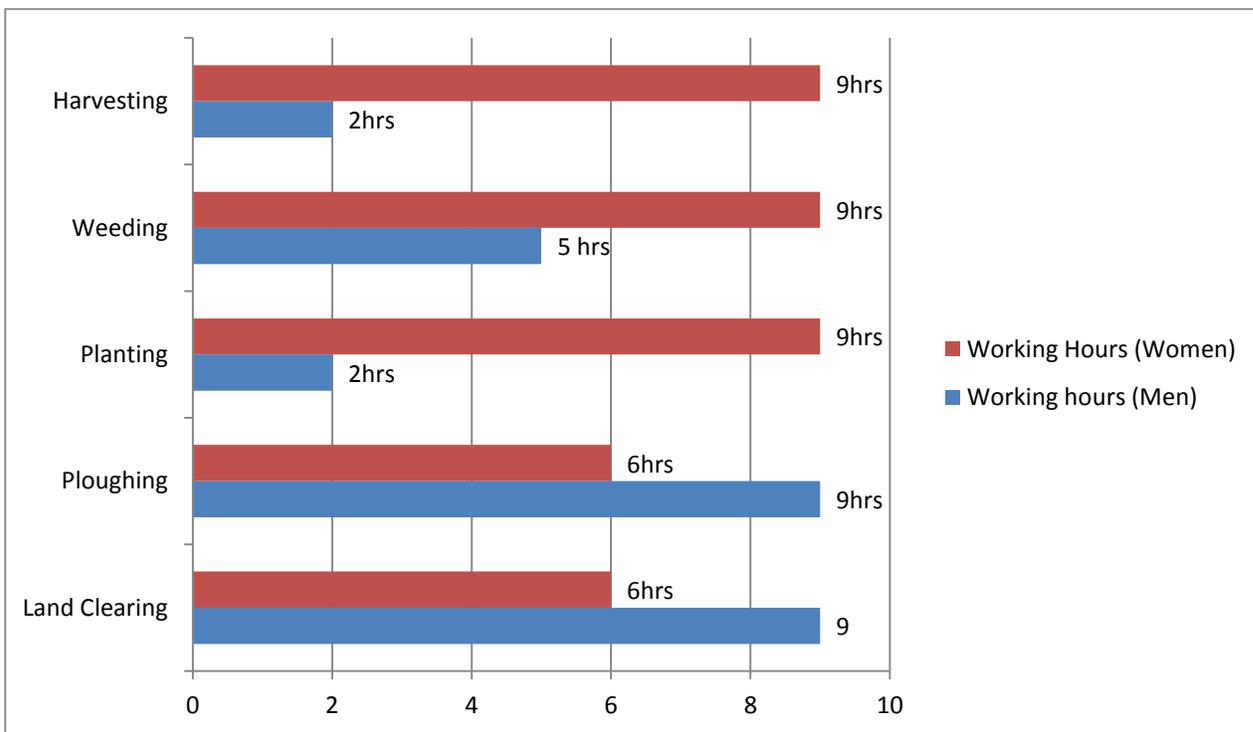


Figure 4.5 Average numbers of hour’s men per week and women work and activities done

This was summarized by one of the participants in a focus group discussion, who said, *“Most of the work is done by women, almost all the work; for most of us, our day start at 4am, we milk the cows, go to dairy, feed the animals, do the care work and go to farms around 9am. We take a break around 1 pm and after we have had our lunch we go back to the farms until dark. It is our role to ensure food security in our households. Men can assist but they cannot be held responsible if there is no sufficient food in the household” [FGD-1, female, 45yrs, Kipipiri].*

The respondents were also asked to indicate on the scale of 1-4 the extent to which they have received support from their husbands in household food production (where the value of 1 meant not at all, 2 little extent, 3 moderate extents and 4 great extents). As presented in the Figure 4.6, majority of the respondents, 77% indicated that they received little support to no support from their husband. Those who did not receive support from their husband were supported by their children. 15% indicated that they receive moderate support from their husbands while 7% indicated having received great support. This is an indication that women in Kipipiri sub-county provide most of the labour required for food production.

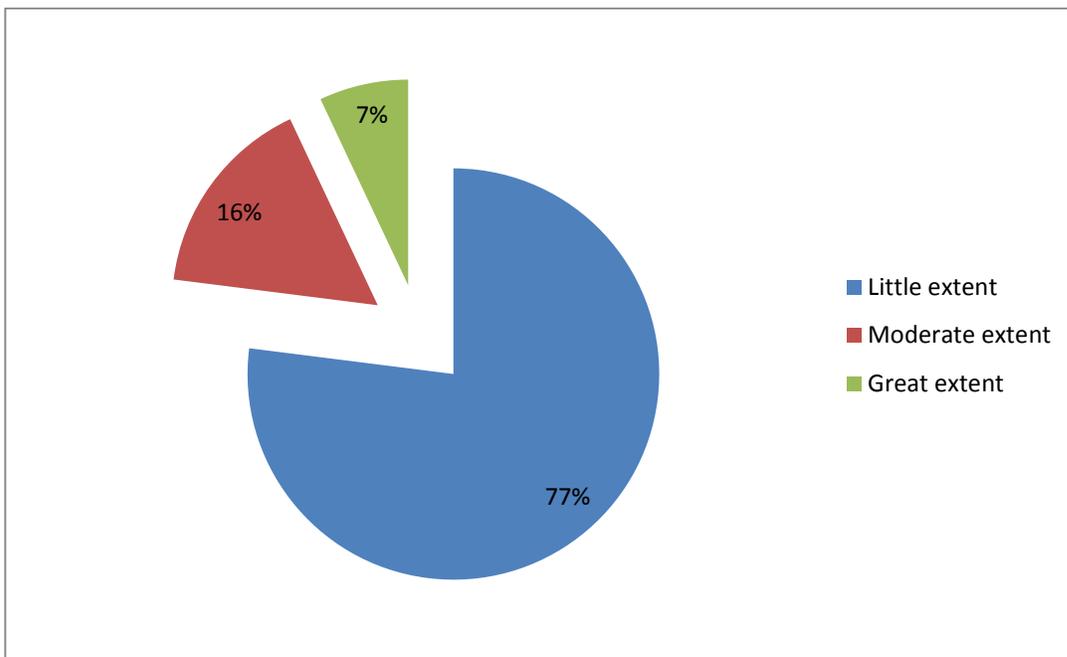


Figure 4.6: Extent to which Women receive support from their husband in household food production

This was summarised by a participant who said,

“In this area farms are for women, we do almost all the work. We must work to provide food for our families. It is our role as women to do so. Our children will not demand food from their fathers but us. We must ensure the family is well fed” [Survey, female 56yrs, Geta].

4.3 Socio-Cultural Challenges Faced by Women in Household Food Production

To establish the socio-cultural challenges to women household food production in Kipipiri Sub-County, respondents rate the extents to which various socio-cultural factors have affected women in household food production in the scale of 1-4. As indicated in the Table 4.3, 35% of the respondent indicated that gender division of responsibility affected women in household food production to a great extent.

A participant in a focus group discussion said this;

“We do all the domestic work; it takes much of our time and energy. By the time we get to the farms we are too exhausted. We don't have a choice but to work. If we do not take care of our families nobody will” [FGD-2, female 37yrs, Wanjohi].

32% of the respondents indicated that lack of decision making autonomy extremely affected their household's food production while 32% of the respondents indicated that gender inequalities in the access to land affected them to a great extent. In addition, 37% of the respondents indicated that gender inequalities in ownership of livestock affected their household food production to a great extent. 31% of the respondents indicated that household headship was a challenge that affected their household food production to a great extent.

Table 4.3: Constraints of Participation of Women in Agriculture for Development

Constraint	Not at all	To a little extent	To a moderate extent	To a great extent	
Division of roles and responsibilities	14%	15%	15%	56%	
Household Headship	19%	15%	14%	52%	This was
Inequalities in access to Land	15%	9%	16%	60%	
Inequalities in livestock ownership	10%	9%	11%	70%	
Decision making autonomy	19%	13%	14%	54%	

summarized by an agricultural extension officer, who said this,

“Women in Kipipiri Sub-County are the most important actors in the food production, but their productivity is constrained by traditional and cultural norms. Our traditions dictate that women must perform all domestic responsibilities and play subordinate role in decision making and in ownership of resources”[KII-1, male, 34yrs, Kipipiri].

The respondents were also asked to explain how each of the factors they identified affected their household food production. On the issue of division of roles and responsibilities, women were observed to be the primarily responsible for farming and domestic work such as caring for the children, cooking, cleaning. This was tightly controlled by social norms around division of labour. Most respondents indicated that such workload took a lot of time and energy. They run late in planting or weeding or skipped the season. Most of the respondents reported having back aches, headaches and stress resulting from the workload, which made them less productive in their farms.

Majority of respondents, 54%, indicated that men made decision solely especially in activities concerning cultivation, preparation of land, when to plant and when to harvest. They also decided on the amount of food to be used in the household and what to be sold and also how to

spend the income obtained from the sales of farm produce. Only a small number of respondents reported having made decisions jointly or being consulted. However, women in female headed household and those whose husband worked far from homes indicated having made decisions alone. The respondent indicated that lack of decision making power affected their household food production especially when they lacked autonomy over the income obtained from sales of surplus farm produce.

This was summarized a participant in a focus group discussion, who said,

“Men culturally are accepted as being the decision makers in the households; we have to wait for them to give us money to buy farm inputs such as fertilizers. If they don’t we will have to plant without and this result to poor yields” [FGD-3, female, 61yrs Geta].

The data shows that gender inequality in ownership to land was a challenge to household food production. Majority of the respondents stated that culture does not allow them to own land. The title deed is registered in their husbands or their father- in-laws names therefore, they do not have collateral to obtain credit, which could be used to buy farm inputs. Mary one of the respondent expressed her wish by saying *“I would like to access credit, to expand our land that is currently not in use but without security it will be impossible” [Survey, female, 27yrs, Kipipiri].*

A key informant recommended that it is important for the county government to work closely with community leaders as this is important in protecting women’s rights are from violation and that government’s attempts to strengthen women’s tenure rights is not frustrated by cultural practices that still favor men over women.

The informant also confirmed that livestock such as cattle, sheep, goats, and donkeys are owned by men while culturally women own birds. He reported that this kind of discrimination affected

women's productivity since they have no right sell them to obtain income or use the manure obtained from livestock to enhance productivity. This was summarized an agricultural extension officer, who said,

“Domestic animals such as cows, goats, sheep, rabbit and donkeys belong to men while women own poultry. Women solely take care of them but have no power to sell them. Most women rely on the manure from the livestock but men can decide to sell all of it forcing women to plant with no manure and this results in low yield” [KII-2, male 37yrs, Geta].

4.4 Economic challenges Faced by Women in Household Food Production

The respondents were asked to indicate if they have other sources of income to supplement their farm food. As summarized in the Figure 4.7, majority of respondents, 73% reported that they totally depend on their farming and sales from surplus food productions. 14% indicated that they could get financial support from their husbands who worked in town to supplement their home diet or sell surplus food produce to the market. 11% of the respondent indicated that they were involved in businesses where they obtained income while 2% were farmers and also employed as teachers. This meant that women farmer did not have alternative source of income which could boost their farming and this was a challenge to household food production.

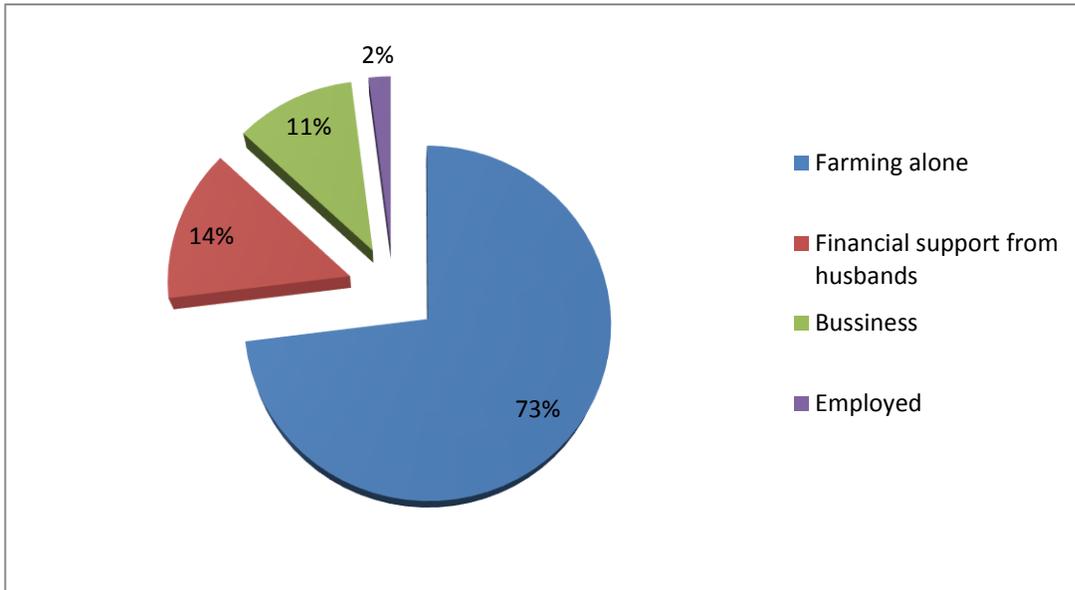


Figure 4.7 Other sources of income to supplement their farm food

To establish the economic challenges, the respondents were asked to rate in the scale 1 to 4, where the value of 1 meant “not at all”, 2 meant “little extent”, 3 meant “moderate extent”, 4 meant “great extent” how various economic factors have affected their household food production.

As indicated in Table 4.4, 66% reported that cost of farm inputs was a challenge to household food production in Kipipiri sub-county to great extent. 49% of the respondents said that limited access to finance and credit facilities affected food production to a great extent while 20% indicated that poverty affected them to a moderate extent.

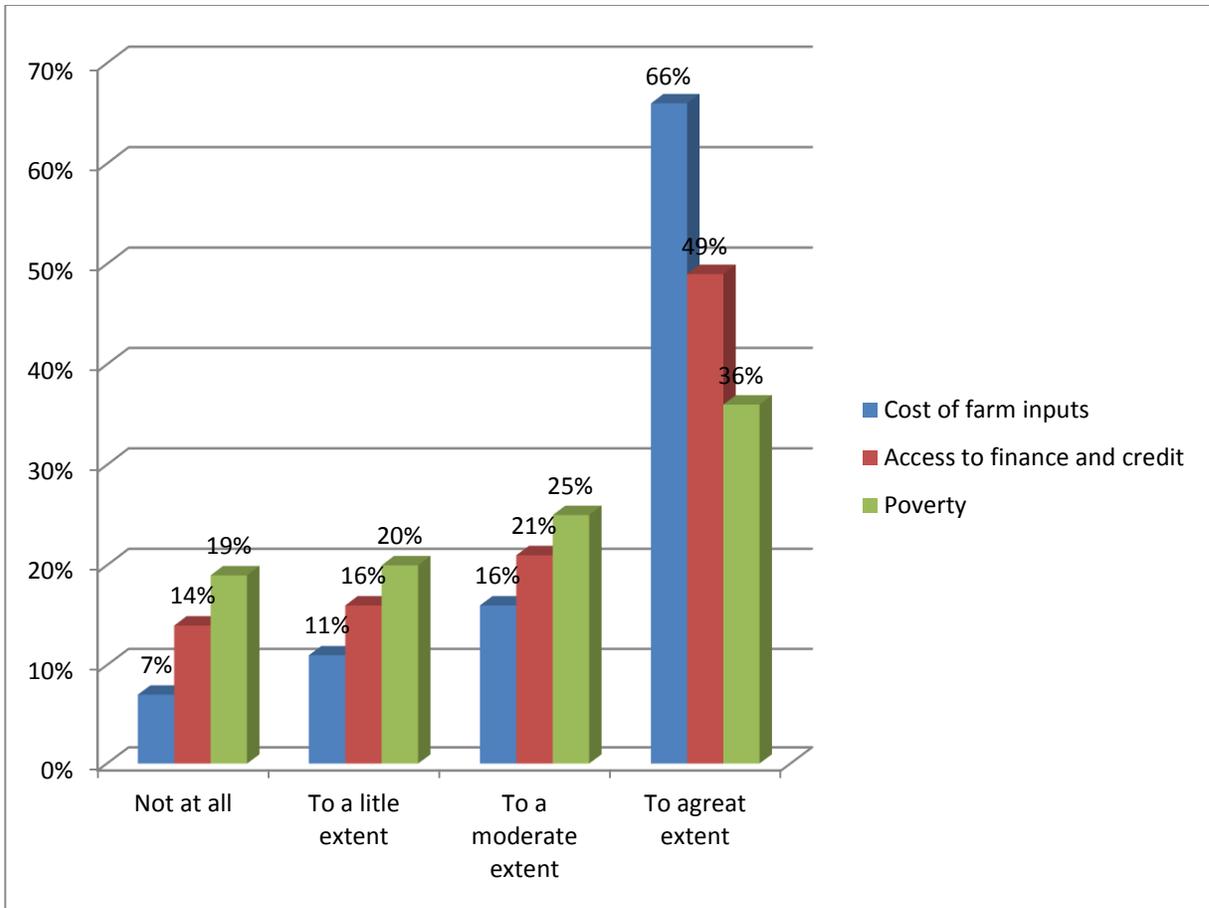


Figure 4.8: Economic challenges facing Women in household food production

The respondents were also asked to explain how each of the economic factors they identified affected their household food production. They reported that price of purchasing farm input forced them to plant their seed without fertilizer or plant low quality seed which resulted to low output and food insecurity in their households. In addition Poverty restricts women’s capacity to buy food, or farm inputs. Most respondent stated that they lack collateral required by lending institutions and this is a hindrance to obtaining finance. This means that they are unable to buy farm input such as fertilizes or high quality seed.

A key informant observed that lack of access to finance and credit bar women in the sub-county from hiring extra labour in their farm and even buying other food that could supplement their household diet. The key informant had this to say;

Majority of women in this area depend on farming. They do not have access to any means of accessing finance which could support their farm activities or improve their home diet [KII-2 male, 41yrs, Kipipiri].

The key informant further stated that Local lands officials are unaware of the existing gender equity laws and in the situation when they do; they are ignorant on mechanisms on how to implement those laws. He recommended that there is a need for proper legislations which are supported by gender-specific rules that give guidance on implementation for partners responsible.

The key informant added that culture has played a great role in discrimination of women in ownership of resources in the county. *“Women are ignorant about their rights, so are men” [KII- 2, male 41yrs, Kipipiri].* He further recommended that the county government should empower women through sensitizing both men and women on women’s rights and on importance’s of abandoning traditions that discriminate against women.

5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the findings of the study in line with the study objectives and research questions. It also presents the conclusion and recommendations of the study.

5.2 Discussion

The overall objective of the study was to determine the challenges facing women in household food production in Kipipiri sub-county. The specific objectives were to examine the social-cultural challenges to women household production and to examine the economic challenges to women participation in agriculture for household food security. The results showed that women are the major providers of the labour required for household food production in the sub-county. They reported having spent more hours in farms compared to men. They dominated most of the activities which were considered women's work including planting, weeding and harvesting. They also spent considerable amount of time in land clearing and ploughing which are considered men's work. Although this results agrees with Quisumbing et.al. (2012) that women provide more labour in food production than men especially in SSA. There is a variance in terms of percentage in working hours, while Quisumbing et al indicate that an African woman on average has their workdays 50 percent longer, in Kipipiri Sub-county, the results from the findings shows that on average women workdays are 18 percent longer compared to men.

The results also show that although women perform most of the work in farms to provide for their households, their capacity is inhibited by some gender inequalities resulting from socio-

cultural beliefs and practices. These findings show that women do much of domestic chores and still find time in between to work in their farms with minimal assistance from their husbands. These high women workloads are associated with low food production as women are unable to dedicate all their energy in farms. Data shows that since culture dictate that women are the primary responsible for food production in their household's, men do not feel obliged to help. This results are in agreement with the studies carried out in Kenya and Tanzania which indicated that in all households, whether men contribute or not to the farming, women were the ones who primarily produced food that sustained their families (Hyder et. al. 2005). Majority of the women indicated that culture did not allow them to own land. They reported that the title deeds were registered under their husbands, their fathers or their grandfather's names. They only had access where they used the land to provide food for their households. Women reported that this was a challenge as they could not make essential decision regarding the land, farm produce or even invest on the land by either planting trees or adopting technology. These findings agrees with studies conducted by AWS and KBS (2014) which found that Land in Kenya is mainly owned by male household heads on the assumption that they hold in trust the rights for all members of the household. This unequal property rights puts Kenyan women at a high risk of food insecurity and poverty. The study found that without land rights; women farmers are unable to access credit or benefits which come with membership of rural organizations such as cooperatives which are mainly the avenues of agricultural inputs and services.

Majority of women in male headed household indicated that they lacked decision making autonomy over various resources within their households. They reported that they did not have control of income obtained from the sale of surplus produce. This meant that they could not use

the money to buy inputs which could improve their productivity. This was reported to be a barrier to household food production. Although this findings corroborate with a study by AWSC (2014) that pointed out that in Kenya men dominate the household decision making power while women play subordinate position and only 38.8 percent of women made decision on what to grow, there is a variance in that data shows that in Kipiriri Sub-county, only 19 percent of women made decision on what to grow on the land.

Majority of women in the Sub-County did not have ownership to high valuable livestock that could fetch them income. They reported that culture only allowed them to own birds. All animals including small animals such as goat, sheep and rabbit were owned by men. This was a challenge to household food production since women could not sell them for income or use manure obtained from those animals to improve their farm yields. This results are in variance in with Agarwal (2003) who pointed out that men own higher value animals such as camel, horses, cattle sheep and donkeys while women own chicken, ducks and rabbits which are less valuable. In Kipiriri Sub-county, women only owned poultry while large animals such as cattle, goat sheep and donkey were owned by men. Small animals such as rabbit were owned by young boys while women only attended to them.

Most women in male headed households in the sub-county indicated that they did not own income from sell surplus produce. Although most of women reported that their husbands spent the income obtained to provide for their households, majority reported that if they had access to the income, their households would be more food secure.

Respondents from the female headed household indicated that they face more labour constraints especially on land clearing and lacked alternative source of income to supplement their household diet. This is in agreement with Peters (2009) who argue that female-headed

households face more severe challenges in access to labour since they have fewer members and have family members to attend to. Results also show that women in the sub-county did not have access to finance and credit facilities that could enable them improve their food production. This was mostly due to poverty and lack of resources such as land that could be used as collateral. This barred their efforts in household food production. These results agrees with Ellis, et al. (2006) who argues that women farmers wish to increase their agricultural activities but lack aces to income, land and necessary inputs to enhance their farming. Baiyegunhiet *al* (2010) on factors affecting credit access for rural households also corroborated the latter sentiments that ownership of land and assets plays a great role in determining whether a household is credit constrained or not and many women are left out which hinder their capacity to participate fully in food production. Similarly, Mehra and Rojas (2005) assert that women have a primary responsibility to ensure food security and nutrition through their roles as food producers but are constrained due to lack of resources and are also trapped in poverty. The participants strongly believed that if the above constrained were addressed, food insecurity in the study area will be reduced.

5.3 Conclusion

The findings of this study revealed that in Kipipiri Sub-County, both men and women participate in agriculture for food production. However women provide much of the labour needed for household food production. Despite their great contribution, economic and social cultural factors in ownership and control of resources have negatively affected their efforts in household food production. The results of the findings show that barely own productive resources that could boost their agricultural activities. In matters relating to ownership of land,

they usually enjoy users rights, mediated through their male relatives. This discrimination has resulted to women undertaking sub optimal decisions with regard to the type of crop to grow and also in access to credit. The study shows that inequalities all through the food production chain are a challenge to achieving food security in the Sub-County.

Efforts by county and national governments to achieve food security and economic development can only be strengthened if they build on women significant contribution in agriculture and take steps to minimize the challenges they face in food production.

5.4 Recommendations

Based on the results from the findings, this study recommends that

1. Food policy need to specifically target the women and empower them in terms of education and capacity building as this will increase their decision power and improve their security status.
2. The community in the sub-county should recognize and appreciate the significant contribution made by women in household food production. Women should not be left alone to solely produce food for the household without support from men.
3. Financial institution should facilitate women access to credit on favorable terms for instance, terms that are tailored for women who mostly do not have fixed assets as collateral.
4. The County Government of Nyandarua need to increase women agricultural extension officer who will reach to women in the county taking key consideration on women's time, poverty and mobility constraints.

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APPENDECES

Appendix 1: Consent form

Good morning/afternoon. My name is Janeffer Ndung'u, I am an MA student at the University of Nairobi carrying out research on challenges facing women in household food production in Kipipiri Sub-County. I humbly request you to fill this questionnaire for me. The information obtained will purely be for the purpose of the research and will be treated with confidentiality. It will be used for academic purposes only in fulfillment of my research project. During the research, no personal benefit will be received for being part of the study. However, your participation will help us understand challenges affecting women in household production in Kipipiri Sub-County. Your participation in the study is voluntary.

Your assistance will be of utmost value in the success of this study.

Do you have any question or concerns regarding the study or your participation? Yes No

If "No" please sign for me this informed consent form for the research. I will leave a copy for your records.

Sign _____ Date _____

Thank you for your cooperation.

Appendix 2: Survey questionnaire

SECTION 1: DEMOGRAPHICS OF THE RESPONDENT

Please tick where appropriate

1. Age of respondent:

20-39 40-59 60 and above

2. Who is the household head in this family?

(01) Father (02) Mother (03) Sibling

3. Marital Status:

(01) Single (02) Married (03) Widowed (04) Divorced

4. What is your highest level of education?

(01)None (02) Primary (03) Secondary (04) Tertiary

5. What type of farming do you practice?

Food crop

Livestock rearing

Mixed farming

SECTION 2: ROLE OF WOMEN IN HOUSEHOLD FOOD PRODUCTION

6. Please indicate the number of persons that work on your farm for food production by gender. Also indicate the average number of hours each person works and activities done on a daily basis.

	Number	Activities done	Working hours
Men			
Women			

7. On a scale of 1-4 where 1= not at all, 2=little extent, 3=moderate extent, 4=great extent and 5=extreme extent, to what extent do you think women have received support from their husbands in household food production.

Statement	1	2	3	4
	Not at all,	Little extent	Moderate extent	Great extent
Support from husband				

SECTION 3: SOCIO-CULTURAL CHALLENGES FACED BY WOMEN IN HOUSEHOLD FOOD PRODUCTION

8(a) on a scale of 1-4 where 1= not at all, 2=little extent, 3=moderate extent and 4=great extent to what extent have the following challenges affected women in household food production in Kipipiri Sub-County?

Constraints	1	2	3	4

Division of roles and responsibilities	Not at all	Little extent	Moderate extent	Great extent
Decision making autonomy				
Gender inequalities in access to land				
Gender inequalities in ownership of livestock				
Household headship				

8 (b) Please explain how each of the following specific factors as identified in 8(a) above is a challenge to household food production.

- i. Gender division of roles and responsibilities: _____

- ii. Lack of decision making autonomy: _____

- iii. Gender inequalities in access to land: _____

- iv. Gender inequalities in ownership of livestock: _____

- v. Household headship: _____

- vi. Others (specify) _____

SECTION 4: ECONOMIC CHALLENGES FACED BY WOMEN IN HOUSEHOLD FOOD PRODUCTION

9(a) Other than farming, do you have any sources of income to supplement you on farm food production?

Yes No

9(b) If yes which are they?

10 (a). On a scale of 1-4 where 1= not at all, 2=little extent, 3=moderate extent, 4=great extent and to what extent has the following challenges affected women in household food production in Kipipiri Sub-County.

Constraints	1 Not at all	2 Little extent	3 Moderate extent	4 Great extent
Finance and Credit Facilities				
Cost of farm inputs				
Poverty				

10(b) Explain how each of the following specific factors as identified in 10 (a) above is a challenge to household food production.

- i. Finance and Credit Facilities: _____
- _____
- _____
- _____

ii. Cost of farm inputs: _____

iii. Poverty: _____

iv. Others (specify) _____

Appendix 3: Focus group discussions guide

We are going to have a discussion on household food production in Kipipiri Sub-County. Our topic of discussion will focus on the role of women to challenges they face in household food production.

1. What in your view is the role of women in agriculture in Kipipiri Sub-County?
2. How have women contributed in house food production in this Cub-county?
3. We are now going to discuss challenges faced by women in household food production. First what are the Socio-cultural challenged faced by women in household food production? Probe; Gender division of roles and responsibilities, gender inequalities in land ownership, gender inequalities in livestock ownership, household decision-making, household headship?
4. What about economic challenges? What challenges do women face in household food production in Kipipiri Sub-County? Probe; finance and credit, unemployment, cost of farm inputs.
5. How has the following factor affected household food production
 - i. Gender division of roles and responsibilities
 - ii. Gender inequalities in land ownership
 - iii. Gender inequalities in livestock ownership
 - iv. Household decision-making
 - v. Household headship
 - vi. Access to financing and credit
 - vii. Poverty
 - viii. Increase in the costs of farm inputs

Appendix 4: Key informant interview guide

1. What is the role of women in household food production?
2. How would you describe the overall contribution of women in household food production in this Sub-County?
3. What are the challenges faced by women in food production in their households in Kipipiri Sub-County? Probe; gender division of roles and responsibilities, lack of access to land, limited decision making power, lack of ownership to livestock?
4. Think of situations where women had control to resources as men, what difference would it make to household food production?
5. What recommendations would you give to eliminate the challenges faced by women in household food production in this Sub-County?

Appendix 5: Research authorization letter



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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NAIROBI-KENYA

Ref. No.

Date:

NACOSTI/P/16/73289/14183

26th October, 2016

Janeffer Njeri Ndungu
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Challenges facing women in household food production in Kipipiri Sub-County, Nyandarua County,*" I am pleased to inform you that you have been authorized to undertake research in **Nyandarua County** for the period ending **24th October, 2017.**

You are advised to report to **the County Commissioner and the County Director of Education, Nyandarua County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nyandarua County.

The County Director of Education
Nyandarua County.

National Commission for Science, Technology and Innovation is ISO 9001:2008 Certified

Appendix 6: Research permit

THIS IS TO CERTIFY THAT: **Permit No. : NACOSTI/P/16/73289/14183**
MISS. JANEFFER NJERI NDUNGU **Date Of Issue : 26th October,2016**
of UNIVERSITY OF NAIROBI, 7588-200. **Fee Recieved :Ksh 1000.**
Nairobi,has been permitted to conduct
research in Myandarua County
on the topic: CHALLENGES FACING
WOMEN IN HOUSEHOLD FOOD
PRODUCTION IN KIPIPIRI SUB-COUNTY,
NYANDARUA COUNTY
for the period ending:
24th October,2017

Applicant's Signature **Director General**
National Commission for Science, Technology & Innovation