

**AN ANALYSIS OF MEN AND WOMEN'S PARTICIPATION IN THE POTATO
VALUE CHAIN: A CASE OF KINANGOP SUB-COUNTY, NYANDARUA
COUNTY, KENYA**

BY

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DECLARATION

This research project is my authentic work and has not been presented elsewhere.

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DEDICATION

To my dear husband Ken, children Ryan, Ron and Nyakio

To the great women of Kinangop for their effort and resilience in challenging the unequal power relations.

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ABSTRACT

This study analyzed men's and women's participation along the potato value chain in Kinangop Sub County, Nyandarua County, Kenya. Gender issues along the value chain were assessed. The study sought to analyze roles and responsibilities of men and women, challenges inhibiting the economic growth of men and women in the value chain and social cultural factors influencing involvement of women. This study was steered by Longwe's framework and CARE's Pathways Theory of Change. Data from the study population was collected through semi structured interviews, focus groups discussions, oral testimonies and key informant interviews. Findings indicate that while men and women actively take part in potato farming, division of labor is to some extent traditional but with a notable trend of women challenging cultural norms around division of labor. Men and women encounter challenges that hinder their growth in this value chain. The extent to which they affect men and women differs with women bearing the blunt of access to credit, control over land as a productive resource and access to agricultural training and extension services. Other challenges include lack of storage facilities and access to good market which cuts across gender. Further, the study established that women's involvement in the potato value chain is slowed down by social cultural factors such as decisions around production where majorities do not give input, control over use of income and time constraints leaving women with a heavy workload and limited leisure time. The study therefore recommends that interventions aimed at addressing gender inequalities should be centered around access to and control over productive resources and services, control over use of income, decisions around production and time allocation.

LIST OF ACRONYMS

AWSC	African Women Studies Centre
CIDP	County Integrated Development Plan
EGIA	Evaluating the Impacts of Gender Integration on Agriculture
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
FFBS	Farmer Field Business School
GT-FFBS	Gender Transformative Farmer Field Business Schools
IDRC	International Development Research Centre
IFC	International Finance Corporation
KALRO	Kenya Agricultural Livestock and Research Organization
KEPHIS	Kenya Plant Health Inspectorate Service
MA	Master of Arts
MoALF	Ministry of Agricultural, Livestock and Fisheries
UON	University of Nairobi
VSLA	Village Savings and Loans Associations
WEAI	Women Empowerment in Agriculture Index

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Root and tuber crop farming plays an important role in food security (KEPHIS, 2016:1). Among the tubers mostly cultivated are Irish potatoes (botanically known as *solanumtuberosum*) which form an important staple food as well as cash crop in Sub Saharan Africa. According to Lutaladio, et al. (2010:9), potato is the world's most important root and tuber crop. It is cultivated by more than 125 countries. Geldermann (n.d: 72) writes that potato is an important cash and food crop which can be a channel out of poverty. He further states that its short cropping cycle of ninety days makes it a popular crop, with a possibility of raising the livelihoods of smallholders. Muthoni, et al. (2013), observes that the early maturity of potatoes is important for food security as it enables households to generate income early to meet financial obligations. In addition, this is an important characteristic as most potato growing areas have a high demand for land and so early harvesting allows more crop cycles in a year.

According to FAO (2012), potato ranks second after maize and wheat as an important food crop. Laititi (2014:59) makes a similar observation stating that due to its high nutritional value, potato can be a strategic food security crop second to maize. Further, FAO (2013:4) notes that Irish potato is increasingly becoming an important source of cash for Kenya's low-income small-scale farmers as it generates considerable employment in production, marketing and processing. The report estimates that around 800,000 farmers grow potatoes with an estimated 2.5 million people employed in the potato subsector as market agents, transporters, processors, vendors and exporters. Maingi et al. (2015:14) makes similar observations that in Kenya, potato is second to maize as an important food and cash crop for many rural and urban Kenyans. Equally, KEPHIS (2016:2) shows that Irish potato can potentially address food insecurity, unemployment and low farm incomes due to its high productivity per unit area and its versatility in utilization. The report further indicates that approximately 1.5 million tons of potatoes worth Kshs 40 to 50billion is produced each year; generating a source of

livelihood for millions of Kenyans. In Nyandarua County, potato is the largest crop cultivated with a market value of Kshs 8.12 billion (Nyandarua CIDP, 2018).

Its higher protein/carbohydrate ratio compared to other cereals and tubers surpasses other alternative crops grown in the highlands (Kinyua et al., 2008:2). At the same time, the study states that potato farming benefits well the intensive smallholder systems that usually characterize the highlands where farmers own small parcels of land measuring between 0.25 and 5 hectares.

An increased urbanization and uptake of processed potato products such as French fries and crisps has resulted in a rise in its demand (Kinyua et al., 2008:1). A report by FAO (2009) similarly shows that other than becoming a valuable source of cash income, potatoes are being used increasingly by the food processing sector to meet the increase in demand of fast food industries as a result of a growing urban population and diet diversification (Lutaladio, et al., 2010:22). The report further states that the changing rural economies into more urbanized societies has led to new market opportunities to participants in the potato value chain. However, despite this increase in demand, Kinyua et al. (2008:1) note that the crop's productivity has been declining. The current potato yield in Sub Saharan Africa stands at 7.8 tons per hectare according to FAO (2012) against a potential of 25 tons per hectare. This decline can be attributed to several challenges facing the sector such as low quality seeds, limited use of inputs such as fertilizer occasioned by high costs and prevalence of pests and diseases (Muthoni et al., 2013:192, GIZ, 2014:8, KEPHIS, 2016:3). Maingi et al. (2015:12) also observes that the biggest challenge facing the potato industry occurs at the production level, infrastructure and the education of farmers. They further take note of other areas of concern in the sub sector which include post harvest management some which result in post-harvest losses, market access, fluctuating prices, poor marketing standards. In addition, potato farming is majorly practiced by small scale holders.

An increase in demand for potatoes therefore means there is a need to address these challenges that affect the sector. A realization that potato greatly contributes to food security, poverty eradication and economic development in areas and countries where it is grown, has led to a growing attraction to potato production (Kinyua et al., 2008).

1.1.1 Potato Production in Kenya

Potato is mainly grown in the high altitude areas of between 1500 and 3000 meters above sea level found in the Central, Eastern and Rift Valley regions. It is a staple food and a cash crop for many families and it provides jobs for many Kenyans (Kaguongo et al., 2013). According to FAO (2013:3), potato farming in Kenya is majorly practiced by small-scale farmers who account for more than 80 percent of all agricultural producers. The report estimates that 800,000 farmers grow potatoes with approximately 2.5 million people employed in the potato subsector at various levels.

However, as in other potato producing areas, Laititi (2014:60; citing FAO, 2010) observes that the potato industry has been facing constraints that have resulted in a decline in production and yields at a rate of 11% per year. KEPHIS (2016:3) has attributed this reduction to less use of high quality seed and other inputs, improper on-farm storage facilities, lack of knowledge and skills by farmers on how to store potatoes, and the need for quick cash which results in premature harvests.

Studies carried out have majorly addressed constraints of potato production and proposed strategies of dealing with the low potato yield. A study by Muthoni, et al. (2013), showed that shortage of clean potato seed, small farm parcels, price fluctuation and diseases are a major constraint to potato production. In addition, availability of market was sighted as a major determinant of potato cultivars grown in an area. GIZ (2014) also considers a limited availability and use of quality seed potato as key barriers to increasing productivity in the Kenya's potato sector. These studies have not considered the role of gender in agricultural productivity. Yet, according to FAO (2011), women make up 43 percent of the agricultural labor force as farmers, farm workers, market sellers, entrepreneurs, fulfilling an important role in the value chain. It is therefore paramount to as observed by Coles and Mitchell (2011), to carry out a gendered value chain analysis to determine the actors, roles played by men and women as well as gender based constraints and opportunities towards potato production and marketing.

Studies on incorporating gender into agricultural and food security outcomes are few in Kenya. Yet understanding the role of gender in agricultural production is crucial in designing policies that would increase productivity in this sector and therefore intensify

economic growth and alleviate poverty (FAO, 2011). To address this gap in knowledge, a study on Evaluating Impacts of Gender Integration on Agriculture and Food Security Outcomes (EGIA) is being carried out in Kinangop Sub County, Nyandarua County that incorporates gender transformative approaches. The aim of the study is to contribute to women's agricultural productivity, incomes, household food and nutrition security and gender equality through a gender transformative Farmer Field Business Schools. This research will form part of the study and contribute to this overall objective. FAO (2011) opines that enhancing gender equality in the rural areas is fundamental to fighting poverty and hunger.

1.2 Statement of the Problem

Potato yields in Kenya continue to be on the decline despite the more acreage dedicated to the crop (Wang'ombe & Van Djick, 2013). This notwithstanding, most studies on potato production and marketing in Kenya have mainly focused on constraints and possible interventions towards the low production (KEPHIS, 2016; Muthoni et al., 2013). In order to ensure high yields, incomes and a great contribution to food security, challenges along the potato value chain have to be considered simultaneously and addressed (Geldermann, n.d:80). This needs to go beyond the conventional ones to establish gender related constraints which greatly hamper agricultural production. There is a limited focus on gender issues along the potato value chain. Yet, gender roles and relations are a determinant to the distribution of benefits emanating from one's involvement in value chain activities (Jeckoniah et al., 2013). Indeed, the study by Muthoni et al. (2013) on potato production in Kenya, potato marketing and production constraints fails to underscore the different constraints faced by either gender. Yet, women in particular face many constraints in the multiple activities they pursue with these constraints and their contribution in agricultural production going unrecognized (Bekele & Tadesse, 2018:17).

A clear illustration on men and women's participation in potato production and marketing in Kenya is needed. Often times, men's role and participation in agricultural activities is understood to be direct and clear. However women's work goes beyond house chores with their participation in agriculture being unrecognized (Messay, 2012). Women play a

role in agriculture but the gender division of labor in farming and the high importance delegated to men's role often results into women not even considering themselves as farmers. Gender inequalities resulting from social norms, attitudes beliefs and patriarchal value systems that create structural power imbalances (EU, 2017) hinder this participation and recognition. There is strong evidence that gender division of labor impacts the ability of men and women to participate and benefit from the production and marketing of sweet potato (Mudege et al., 2016: 60). This study showed that there is a strong link between gender relation and division of roles in sweet potato production that influences the ability of men and women to adopt and utilize certain technologies. A study by Tiay et al. (2016) on potato value chain analysis in Njoro Sub County, fails to underline the different roles played by men and women in the potato value chain. The study rather focuses on the different categories of value chain actors without necessarily providing a gender disaggregated data and so failing to show how men and women participate along the value chain. Equally, this means that constraints and opportunities along the value chain are not attributable to either gender but rather the different categories.

1.3 Objectives of the Study

1.3.1 Overall Objective

To assess gender issues along the potato value chain in Kinangop Sub County.

1.3.2 Specific Objectives

- i. To analyze the roles and responsibilities of men and women in the potato value chain.
- ii. To identify challenges faced by men and women along the value chain and which inhibit their growth
- iii. To examine the social-cultural factors that influence the participation of women in the potato value chain.

1.4 Research Questions

To address the specific objectives, the study was guided by the following research questions:

- i. What are the roles and responsibilities of men and women in the potato value chain?
- ii. What are the challenges faced by men and women along the value chain?
- iii. What are the social-cultural factors that influence the participation of men and women in the potato value chain?

1.5 Justification of the Study

Among the many challenges of developing countries is to ensure food security for the ever increasing populations. Potato can potentially contribute to food and nutrition security. In Kenya, numerous challenges have limited potato productivity with yields continuously falling considerably. The research findings have established the gender related challenges among them inequalities between men and women in terms of participation in farming that have contributed to low potato productivity especially among the small scale farmers in Kinangop Sub County. For greater productivity, it is important that a more inclusive and sustainable solution is adopted. Further, the research findings have laid out a clear picture into the role played by gender relations in agricultural production and therefore give crucial insights into designing policies that will increase productivity in the potato production sector and so enhance economic growth and alleviate poverty. Equally, the roles of women in potato farming that often go unrecognized and so making their contribution qualitatively and quantitatively visible have been laid bare. Nyandarua's CIDP2 (2018) recognizes that 76.9% of households practice crop farming with potato being the most cultivated. It also recognizes that more females than males are involved in agricultural production. The findings are helpful in designing of pro women policies at the county level and which could be replicated elsewhere.

Discussions have shown that programs that are effective and efficient and which foster equal access to resources of production should be designed. This would eventually advance women's empowerment as well as gender equality in the society. Development partners that have taken gender analysis as an important aspect of the design, implementation and evaluation of development projects would equally benefit.

Understanding of gender roles along the potato value chain as shown in this study's findings are important for policy makers and development planners who will concentrate more on different gender categories that are actively involved in improving potato production and productivity.

The findings have equally added on to the larger project on Evaluating the Impacts of Gender Integration on Agriculture and Food Security and Nutrition Outcomes in Kinangop Sub County which aims to bridge existing knowledge gaps on the role of gender in agriculture, promote gender transformative programming in light of changing climate and engage women to realize benefits of productive, profitable and equitable agricultural initiatives. The findings have also added on to the existing literature on gender and agricultural productivity.

1.6 Scope and Limitations

The study was carried out in Kinangop Sub County, Nyandarua County. This study focused on analyzing gender issues along the potato value chain. The study established the roles and responsibilities of men and women on the potato value chain, challenges and opportunities for growth as well as social-cultural factors influencing participation of women in the value chain.

Data that answered the research questions exhaustively was collected using qualitative data collection method which included focus groups discussion, key informant interviews, semi structured interviews, oral testimonies and observation methods. These methods of data collection methodologies allowed men and women to share their experiences without much interruption to their daily schedules. This study was limited to men and women involved in potato farming. A time plan was drawn and strictly adhered to which ensured that the study was completed within the stipulated time frame.

1.7 Definition of Key Terms

Value chain: Refers to the full range of activities under production, harvesting and marketing of potatoes. This shall include land preparation, digging furrows, manure and fertiliser application, sowing, weeding, pesticide spraying, harvesting, bagging, transportation, storage, looking for market and selling the produce.

Productive resources and services: Refers to land, farm machineries, credit facilities, skills, agricultural training, extension services, labor saving technologies and storage facilities.

Participation: Refers to the direct involvement of men and women in the value chain so as to build their capabilities to have access to and control over productive resources and services, as well as input into decision making.

Social cultural factors: Refers to social and cultural elements of a society such as beliefs, attitudes and traditional norms and which influence the behavior of an individual.

Gender roles: Refers to the roles and behaviors learnt by a person due to their gender and often influenced by cultural norms.

Gender division of labor: This refers to the way work, tasks and responsibilities are assigned to men and women in their daily lives.

Reproductive roles: Refers to roles carried out by women and which often go unpaid. These include care and maintenance of the household, child care, cooking, fetching water and firewood, among others.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section reviews existing literature covered under the following topics; gender and agriculture, gender division of labor, constraints to participation in agricultural production and constraints to participation to marketing.

The important role played by agriculture in developing countries cannot be ignored. Mozumdar (2012:55) reports that increasing agricultural productivity is necessary in order to satisfy the global population. Enhancing food and nutrition security and sustaining livelihoods in these countries means increasing agricultural productivity is crucial (Sneyers & Vandeplass, 2015:3). The declining trend in acreage under most crops cultivated is an indication that land is becoming one of the constraining factors in agricultural production (Kibaara et al 2008). The report further indicates that any increase in agricultural production will need to be attained through productivity growth. This equally noted by Mozumdar (2012) who lauds intensive agricultural growth over extensive growth. This can be a sure way on ensuring food security for the small scale farmers eventually.

Men and women play major roles towards agricultural productivity. Women in particular make great contribution to agriculture in the developing countries making up approximately 43 percent in agricultural labor force (FAO, 2011). It is however important to know the obstacles to increasing agricultural production. Mozumdar (2012) has highlighted several constraints around land rights and inadequate credit. Other highlighted factors include labor and agricultural inputs which all inhibit agricultural productivity. Women however have lower yields compared to their male counterparts due to a lower command of resources resulting from institutional and norm-based constraints (Croppenstedt et al., 2013).

Research has shown that control over productive resources strongly influences efforts to achieve development and reduce poverty and that without a fair control over the productive resources, the equitability of gender is unlikely and hence their contribution

towards poverty alleviation endeavors are minimal (Mare, 2017). Productivity for both men and women in agriculture is affected by gender gaps in access to different types of assets such as land (Quisumbing et al., 2014). The report further states that control over and ownership of assets is a critical component of well-being. Findings of a study in Ethiopia point to the need to increase female's access to farming land in order to enhance agricultural productivity and therefore address household food security (Ogato et al., 2009:90). The findings also indicate that due to gender division of labor and cultural barriers, female farmers have inadequate access to productive resources. Male farmers were found to enjoy better access to productive resources because of family headship and gender division of labor. Similarly, Deere and Leal (2001) opines that the perspective of economic empowerment of rural women in developing countries can be understood in terms of three key issues namely increasing access to key assets and control over them, increasing their influence in decision-making processes, and improvement of their well-being and ease of their workload. Land therefore becomes the beginning of the discussion on the role of assets because it plays an important role in both agricultural production and security. It is therefore important to look at the social and cultural factors that lead to women's disadvantaged position in accessing land. FAO (2011) reported that social customs curtail women's participation in decision making processes as well as their exposure to economic opportunities that may arise. This, as the report states, increases their level of inequality compared to their male counterparts.

2.2 Constraints to Participation in Agricultural Production

Rural women as well as men throughout the world engage in a range of productive activities essential to household welfare, agricultural productivity and economic growth. However, women's low economic status often limits their chances for broader participation in the society (Fabiya et al., 2007). They are faced with a variety of constraints that make them unable to fulfill their role as gatekeepers for food security in their households. The Leveraging Economic Opportunities (LEO, 2016) report remarks that women are mostly restricted by issues related to low capacity, lack of assets and structural barriers including policies and cultural norms. Further, FAO (2011) report on the State of Food and Agriculture, remarks that women's agricultural productivity and

yields are 20 percent to 30 percent lower than that of men due to constraints such as limited access to quality seeds, equipment, technology and hired labor. These constraints similarly affect men but to a lesser extent though women bear the brunt of it as a result of socio-cultural norms.

IFC (2016) opines that constraints faced by women are usually intertwined in that lack of finances could affect their ability to purchase quality seeds and inputs. They may also not be in a position to hire additional labor to enhance productivity. A study by Odoemelum et al. (2014) revealed that women complained about labor constraints since they were mostly engaged by other farmers for wages in order to sustain their families and therefore giving less time to their farms. They also complained of owning small and less valuable plots and so large scale cropping was difficult for them to practice. Another study in Nigeria sought to identify constraints to rural women's participation in food production. The findings indicated that women in rural areas experienced challenges that affected their level of food production (Oyoyou, 2010). She highlighted constraints such as illiteracy, poverty and lack of application of appropriate technology. Poverty as she noted resulted in a lack of money to finance farming practices.

IFC (2016) also sites lower level of access to education and training as another factor that limits women farmer's productivity. Low literacy levels could make agricultural training difficult for women and therefore may be unable to benefit from improved agricultural practices. Education widens information horizons for individuals. A study by Pooja et al. (2016:4525) showed that 55 percent of the women respondents cited illiteracy with another 49 percent citing lack of knowledge and skills as factors that hindered their growth. And so as a result they were found to remain confined in their traditional package of practices. Odoemelum et al. (2014) observed that women complained of limited access to formal education implying that farm information concerning production and management was limited. Other constraints cited include limited access to financial services (IFC, 2016) and little access to capital and other assets that make production easy and profitable (Fabiya et al., 2007). The study showed that a majority of women in the study area had financial problems and lacked financial assistance. Women had to beg for farmlands from husbands and male relatives.

Pooja et al. (2016:4525)) indicated that 76 percent women farmers cited lack of credit as the main financial constraint faced by women farmers. Rural women also face constraints in access to labor saving technologies such as mechanized farm equipment which can ease farmers' workload and increase their labor productivity (IFC, 2016). Low educational levels, low access to information on labor saving technologies and tools, socio-cultural norms are cited as the major reasons are limited access to technology. Findings of a study in Niger Delta, Nigeria, showed that constraints to women farmers adopting new technologies included low income levels, high cost for inputs for introduced technology, complexity of the introduced technology and poor attitude of women farmers towards change and risk (Akpabio et al., 2012). Age was another factor cited whereby older women were reluctant to adopt new technology. Flavia et al., (2015) similarly cites limitations in the acceptance of women using technologies, affordability and manageability of certain tolls for women.

Access to leadership and participation is another factor that constraints women to participate in agricultural production. IFC (2016) observes that farmer associations play an important role in establishing bargaining power for their members, creating networks, creating avenues for resource sharing and encouraging access to markets. Yet, women's participation and leadership in such associations tends to be limited. Findings of a study by Khamphoui (2012) indicate that men dominate leadership positions even though women form the majority of members. Even then, they are quiet during group meetings and discussions and so most of the decisions are made by men. It was noted that women's triple roles made it difficult to become leaders as they have little time to devote to other responsibilities. Women who took leadership positions were responsible for accounting, book keeping and calling members for meetings as well as acting as hosts and serving of refreshments to guests. Lack of decision making power by women is another factor. Men are considered as the automatic households and community leaders and so they naturally take up leadership roles.

Women continue to face post harvest processing and storage constraints (IFC, 2016). Lack of storage facilities gives them pressure to sell during the harvest season when prices are low. Tiay et al. (2016) similarly reports lack of adequate storage facilities and

perishability of potatoes leading to post-harvest losses due to rotting as one of the challenges faced by potato farmers. A study by Jeckoniah et al. (2015) found that a majority of farmers sold their onions while still in the field before harvesting due to lack of alternative sources of income and lack of adequate storage facilities. This leads to exploitation by the traders by offering them lower prices, as farmers are pressurized by financial needs.

2.3 Constraints to Participation in Marketing

Quisumbing et al. (2014) writes that by improving women's engagement in agricultural value chains, the flow of quality goods can be assured, efficiency of businesses can be guaranteed as well as improving the market opportunities for women. But as stated by Mugege et al. (2015) inaccessible markets by small holder farmers negatively impact their incomes and eventually agricultural productivity. Change & Be'Soer, (2001) noted that women's involvement in marketing was hampered by heavy workloads and poor facilities at the open markets. There is therefore a need to analyze how gender inequalities affect men's and women's involvement and participation in agricultural markets equitably.

According to IFC (2016), women are more likely to be excluded from marketing or sales roles even when they are the main producers of the goods. The report further highlights other constraints that women are likely to face keeping them away from participating in the most profitable value chain. Cultural norms may restrict women's freedom of movement. This presents the most challenging barrier to women's participation in the low value markets. A World Bank report states that obligations within households affect their ability compared to men to take up opportunities, to invest and to take risks. IFC also reports that these restrictions arise as a result of division of labor between men and women confining women to home-based activities. Men on the other are more likely to access more distant markets as they may not be as restricted as the women. Women are also likely to sell their goods locally without exploring wider opportunities due to limited business networks.

Discriminatory cultural attitudes may act as a hindrance to women farmers engaging in value chains or better still participate in restricted roles (World Bank Report:186). Women for instance are likely to have a low access to information and networks. This as noted by IFC, means that women may miss out on informal business networks that facilitate sales opportunities. This might mean that they are left to sell their produce to local middle men who often times exploit them, coupled with the fact that low access to information may mean that they may not be able to act on the latest market information. The discriminatory cultural attitudes are also evident in that women are less likely to be given leadership positions in associations compared to men. Most women act as stand-ins for male family members and therefore challenges that they face may not be adequately addressed as well as inability to voice their concerns in male dominated associations.

Women tend to have smaller farms and mostly cultivate traditional food crops for subsistence. In addition, in accessibility to market may differ by gender as noted by Doss, (2016). Doss also observes that there is evidence suggesting that there may be systematic gender differences in the prices received by men and women for the same output. Women are more likely to sell most of their produce at the farm gate due to various reasons such as; limited time as a result of household responsibilities (this may impact on their time to go to the market to sell their produce), or because they have smaller quantities that are not worthwhile taking to the market.

A study by Baden (1998) noted other constraints to women's participation in marketing. He noted that women in Sub Saharan Africa may lack information about prices and marketing systems. They equally have less control over the marketing of crops even after making considerable input in terms of labor and in particular cash crops. Doss (2016) remarks that social structures may be hindrance to women negotiating effectively with male traders for higher prices. Access to information about technologies and markets was cited as another constraint that women are likely to face compared to men. Findings of a study in Uganda on gender roles in potato and cooking banana value chains indicate that traders and buyers would lower or increase produce prices depending on who was selling or buying (CGIAR, 2016). This would have an implication on women's levels of income as they may not benefit from higher sales. It was also notable that low levels of income

meant that women could not access quality seeds and this eventually affected the quality and quantity of their harvest. Oyoyou (2010) noted that inaccessible roads leads to women selling off their produce at farm gate and often times at low prices.

An analysis on potato value chain in Njoro Sub County by Tiay et al. (2016) only highlights infrastructural and structural constraints faced by potato traders along the marketing chain. These include poor access roads, high taxation by the county governments and lack of storage facilities. The study does not highlight gender related constraints and barriers to men and women participating in this node. A similar study on onion value chain analysis in Tanzania reveals that men are mostly involved in the marketing of the produce due to the traditional set up norms where men have an upper hand in the decision making at the household level (Jeckoniah et al., 2013:532). This study established that inexperience of women in engaging with large enterprises as one of the barriers to women's involvement in wholesale marketing of onions.

LEO (2016) noted that men tend to dominate functions with higher barriers to entry compared to female farmers who tend to be less involved in marketing than in production and post-harvest handling. Findings by Jeckoniah et al. (2013) echo this by showing that women dominated onion retail marketing as it did not require big startup capital and is normally carried out in the surrounding areas and villages. This as the study states is preferred by women since it overcomes the problem of limited mobility imposed by their husbands. Other factors mentioned were lack of capital to transport the produce to the market, poor bargaining skills, and lack of support from husbands and limited movement imposed by their husbands. Social norms regarding interactions between men and women also hindered effective participation of women in marketing of the produce. The study also reveals a value chain that is heavily dominated by male brokerage locking out female farmers who lack the capital and experience in big business enterprises. Women's business relationships are mostly limited to those they know and trust and this limits their engagement in selling of their produce.

2.4 Gender Division of Labor

ILO (2008) has defined gender division of labor as the way work is divided between men and women according to their gender roles. It describes it as the way work, tasks and responsibilities are assigned to men and women in their daily lives and which also determine certain patterns in the labor market. The division of labor has more to do with what each society perceives as appropriate for each sex. Sikod (2007) observes several factors contributing to this gender division of labor. Some are gender biased and include activities ascribed to women such as caring for children, and domestic chores such as cooking, fetching water. He also notes that they come as result of socio-cultural socialization. Other variables responsible for division of labor include age, culture and education. He noted that education is one factor that helps women break down barriers to these socialization factors that breed the gender division of household labor.

Arora (2014:2) noted that patriarchal norms largely shape gender roles and responsibilities and that in the rural areas especially, these roles are rigid, placing a heavy work burden on women and impairs efficiency. Women have to balance their multiple roles in farm production and household maintenance which include caring for the sick which is not only detrimental to their health but also a source of inefficiency. The extensive pressure on women eventually leads to lowering their productivity. A study by Tarimo et al. (2009) on caring for AIDS patients in Tanzania, showed that due to this pressure, women's labor hours to cultivation was greatly reduced.

Traditionally, men and women perform different roles in agriculture often attributed to the gendered institutions that compel women to care for the household chores and so it becomes a social construct (Arora et al., 2017). Abate (2017) similarly observed that a number of factors are responsible for this division of labor. Some result from socially constructed norms and expectations. These inequalities between men and women make it hard for women to fulfill their potential. Abate has further argued that women invest longer time than men to achieve the same level of living. More time is spent on house chores with little access to resources that would ease their workload and make their work more productive. A higher proportion of their time is spent on unpaid house chores such

as food preparation and gathering of fuel and water. These labor intensive and time consuming activities hinder women's ability to improve their income earning potential.

A study in Ethiopia by Abate (2017) sought to investigate gender division of labor in general crop production. The results showed that division of labor was traditional meaning that some tasks were reserved for men and others women. There was a clear gender, age based division of labor in crop production. The study showed that women spent more time in the production stage doing seed bed preparation, weeding, harvesting of crops, transporting and storage preparation. Men on the other hand solely performed planting, transporting yields to home, carrying farm tools and ploughing farms using animals. Women would also assist their husbands to cover the seed with soil, pull horses and clear waste from the field. Other constraints identified in the study which inhibit women's participation were heavy domestic work load, low time spent away from home and low education status compared to men.

Adenugba and Mustapha (2013) discusses constraints faced by rural women in Nigeria in promoting agricultural productivity. Among them are asymmetric rights and obligations within the household whereby the obligations of rural women are more time consuming than that of men. This results to women farmers having to work for more hours than men and therefore less time for activities including those that could provide income. A similar study in Nigeria showed that women engage in most agricultural activities other than felling of trees and spraying of chemicals. These activities included land preparation, planting, weeding, harvesting, processing and marketing (Fabiya et al., 2007). The study showed that the responsibility of getting food for families heavily lies with the women with 50 percent of those interviewed growing groundnuts and soybeans, 40 percent planted rice and 25 percent cultivating maize.

Studies around potato production and marketing in Kenya have mainly focused on production constraints without necessarily relating the output to existing gender relations particularly gender division of labor. The unequal gender division of labor which results in time poverty among women impedes the growth of household's agricultural output (Arora, 2014:18). Shimelis and Melis (2014) carried out a study on potato production in Kenya focusing on farming systems and production constraints. The study however fails

to consider the influence of gender relations which as pointed out by Arora (2014), impact on the agricultural output. Tiay et al. (2016) carried out an analysis on potato value chain in Njoro Sub County. He however does not attribute his findings to any gender influence and relations which as noted, is one of the factors that affect productivity among small scale women farmers. Further, the study does not give us a gender disaggregated data indicating how men and women participate in the value chain as well as constraints faced by either of the gender.

Sah et al. (2007) carried out a gender analysis on potato cultivation in Meghalaya India. The study revealed that women dominated the potato production activities which included application of chemical fertilizers, selection of seeds and planting, weeding and earthing operations were carried out by women while men performed the same activities at a lesser frequency compared to women. Harvesting was equally done by women. Post harvest related activities which included sorting and grading and storage of the produce was primarily done by women. Potato marketing activities such as purchase of fungicides, fertilizers and insecticides was primarily done by men. However, this study did not carry out the views and perspectives of men which is one of the principles in carrying out a gender analysis. The study was also purely quantitative implying that the gender inequalities which are also expressed in norms and attitudes were not possible to gather (Sida, 2015).

A study by Khasa and Msuya (2016) on gender roles in the tomato value chain in Tanzania reveals that the nature of crop being cultivated determined the gender roles. Tomato production is characterized by high costs and so it is dominated by high and middle income earners. The findings indicate that middle aged male farmers dominate the tomato production. The same study reveals that transportation of the produce is done by women by way of head loading while men use motorcycles, cars and trucks. This was linked to tomato marketing which the men dominate. Brokering along the tomato value chain was mostly dominated by middle aged male and male youth. The findings indicate that middle aged females are slowly undertaking middle men activities due to changing gender roles. Middle aged females were also getting involved in the supplying of inputs chain though the numbers were lesser than that of men. Again this was attributable to the

changing gender roles. He concludes by stating that neglecting different categories that are important in the value chain could partly contribute to failure by many interventions to increase agricultural production and productivity.

Mare (2017) notes that among the rural communities, gender division of labor is one of the hindrances to fighting poverty fully. He further states that division of farm tasks labor varies according to enterprise, cultural setting, location and wealth of the household. The study findings on gender division of labor and productive resources in Ethiopia show that women's roles go unrecognized even though they are the main producers. The study also shows that women mostly undertake domestic chores that do not generate income. Men undertake the heavy labor such as land clearing while women carry out tasks that are repetitive in nature and time consuming such as weeding. From the study, 64 percent of the productive activities were carried by men compared to only 17 percent by women. The study however focuses on general crop production yet gender division of labor varies according to the enterprise.

Jeckoniah et al. (2013) found that women who were married reported that they were compelled to perform tasks in the onion production before managing their own farm plots. Women also carried out other household chores leading to an increase in the work load burden. They equally cited less support which led to a shift in the roles and involvement in some activities and inability to afford high costs of labor for the onion production activities which characterizes this value chain, unlike potato production. Women in this region were also found to be heavily involved in household chores and therefore engagement in productive activities was viewed as an additional burden making them not fully engage in such activities. Notably, this study was carried out in a region heavily dominated by the Maasai ethnic group who are patriarchal in nature and where men dominate decision making processes.

2.5 Theoretical Framework

Grant and Onsaloo (2014) state that a theoretical framework consists of a theory that provides grounding base for the literature review methods and analysis. It serves as the structure and support for the rationale for the study, problem statement, significance and

the research questions. According to Adom et al. (2018), a theoretical framework serves as the focus for research and so makes the research findings more meaningful and generalizable.

2.5.1 Theory of Change

This research study will utilize CARE's Pathways Theory of Change which addresses the underlying causes of poverty and women's exclusion in agriculture through increased productivity and empowerment of women farmers and more equitable agriculture systems at scale. Addressing unequal power relations is a precondition for women to access resources and opportunities to improve their productivity, and that in turn, improving their productivity and profitability contributes to women's intra household influence and bargaining power. Addressing social norms and institutional and market challenges is the foundation for lasting transformation.

CARE recognizes women's empowerment as the sum total of changes in Agency, Structures and Relations. Every woman acts, decides and analyses and sometimes they do so in ways that challenge gender inequities and other times reinforcing them. And so empowerment becomes the journey through which women use their agency to expand their options and challenge inequities. Structures on the other hand refer to the institutional barriers, routines and interactions that serve to obstruct gender inequalities at the household level, community and at the market place. And lastly, relations through which women negotiate their needs and rights with other social actors who include men. Both agency and structure are mediated through relationships between and among social actors while, at the same time, forms and patterns of relationships are deeply influenced by agency and structure.

Relevance of the Theory of Change to the Study

As observed, the theory of change seeks to address the underlying causes of poverty and women's exclusion in agriculture. Using this theory will help bring out the underlying causes of women's poverty, desired long term changes, actions to be taken and possible barriers to these changes.

2.5.2 Women's Empowerment Framework

Developed by Longwe (1994), this framework aims to help planners question the meaning of women's empowerment and equality in practice, and to assess the extent to which a development intervention is supporting this empowerment. Longwe defines women empowerment as enabling women to take an equal place with men and participate equally in the development process so as to achieve control over factors of production on an equal basis with men. Development therefore means enabling people to take charge of their own lives. With this, they can escape from poverty that arises from oppressions and exploitation.

Five levels of equality have been noted which indicate the extent to which women are equal with men and the extent to which they have achieved empowerment. These are welfare, access, conscientization, participation and control. According to Longwe, welfare refers to women's access to material resources and whether access is equal to that of men. Access refers to women's equal access to factors of production on an equal basis with men. Such include land, labor, credit, training and marketing facilities. Longwe then refers to conscientization as an awareness that gender roles are cultural and can be changed. She then defines participation as the equal participation of men and women in decision making processes. It means involving women in making decision by which their community will be affected, in a proportion that matches their proportion in the community. The fifth level of equality according to Longwe is control. This means that through conscientization and mobilization, women can achieve equality of control over the factors of production and the distribution of benefits. It is the balance of control so that no gender dominates.

The fundamental elements of this framework is that despite the differences, is a recognition that men and women have different socially-constructed roles that affect decision making processes and resource allocation within the household.

Relevance of the Framework to the Study

The Longwe Framework will allow the systematic study of the differences in the roles and responsibilities of men and women and their access to and control over resources. It will also help in understanding the practical meaning of empowerment and equality of women in Kinangop Sub County.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter provides a detailed description of the study area. Maps have been used to provide a clear picture of the study area. The chapter also covers research design utilized, study population, sample size and sampling techniques, data processing, data analysis, recruitment and training of research assistant and finally ethical consideration that steered this research study.

3.2 Study Site

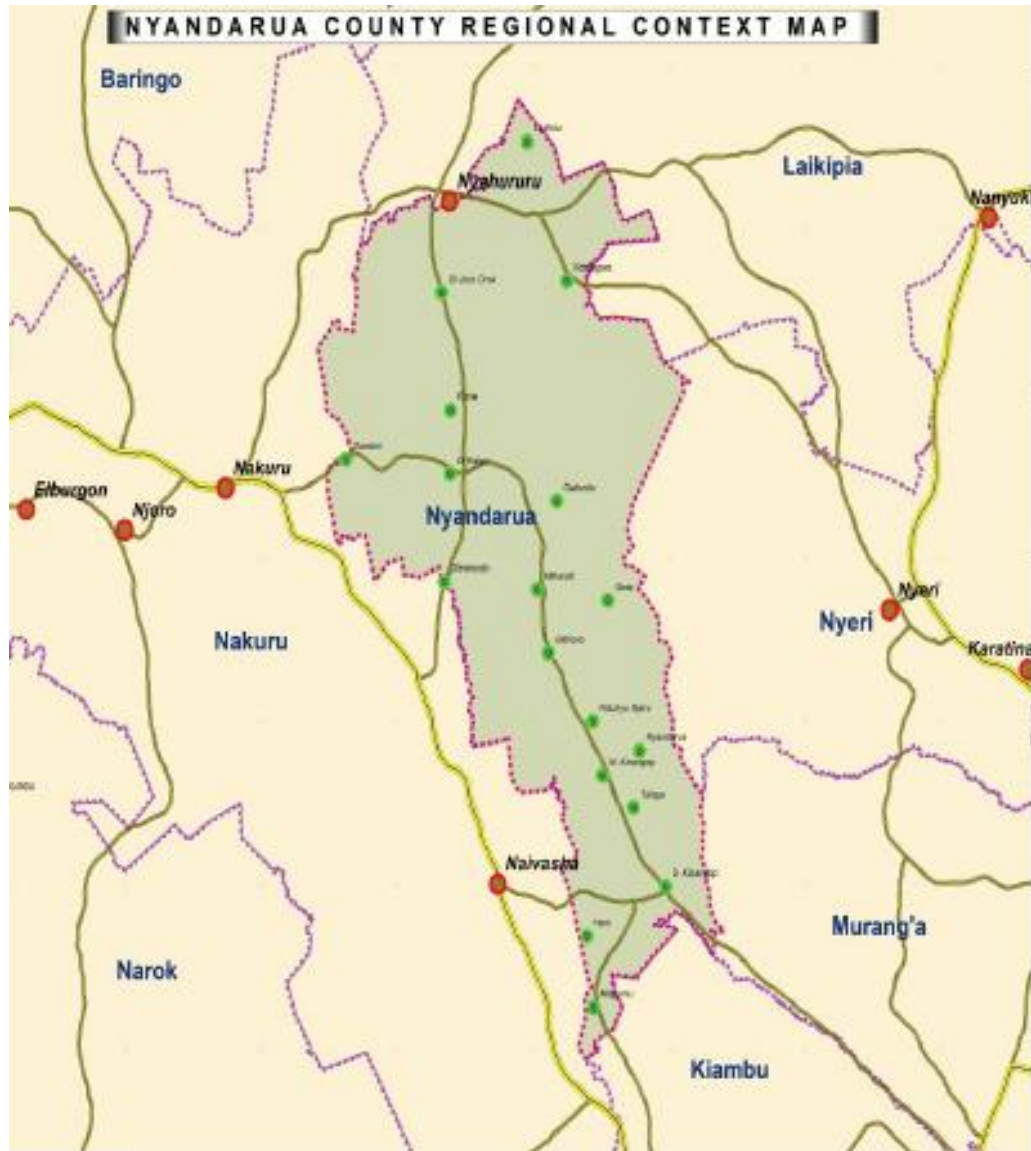
The research study was conducted in Kinangop Sub County, which is one of the five Sub Counties making up Nyandarua County. It borders Kipipiri Sub County to the North, Lari Sub County to the South East and Naivasha Sub County to the South West. The Sub County comprises of eight wards namely, Githabai, Nyakio, Murungaru, Gathara, Njabini, Magumu, Engineer and North Kiannangop. With a population of 193,379 (Male: 94,331; Female: 98,048), Kinangop has the highest population in Nyandarua County with a total of 45,141 households. According to Kenya National Bureau of Statistics, Kinangop Sub County covers a total of 822 square kilometers in size with a total of 45,141 households and a population density of 234.03 persons per square kilometer (KNBS, 2013).

According to the Nyandarua County Development Plan (CIDP, 2018), Kinangop Sub County is largely an agricultural area which forms the main economic activity. This includes dairy and crop farming. Crops grown in this area include Irish potatoes, garden peas, cabbage, carrots and kales making the region the largest producer in the country. The produce is mainly sold and consumed in the capital city of Nairobi, Kenya. The Sub County leads in potato production in the larger Nyandarua County.

The study area is predominantly occupied by the Kikuyu ethnic group of Kenya who like many other communities in the country is relatively a patriarchal society. Women in this region are heavily integrated into the typically agricultural sector which is labor intensive. Though making significant contribution to the sector, they do so with limited

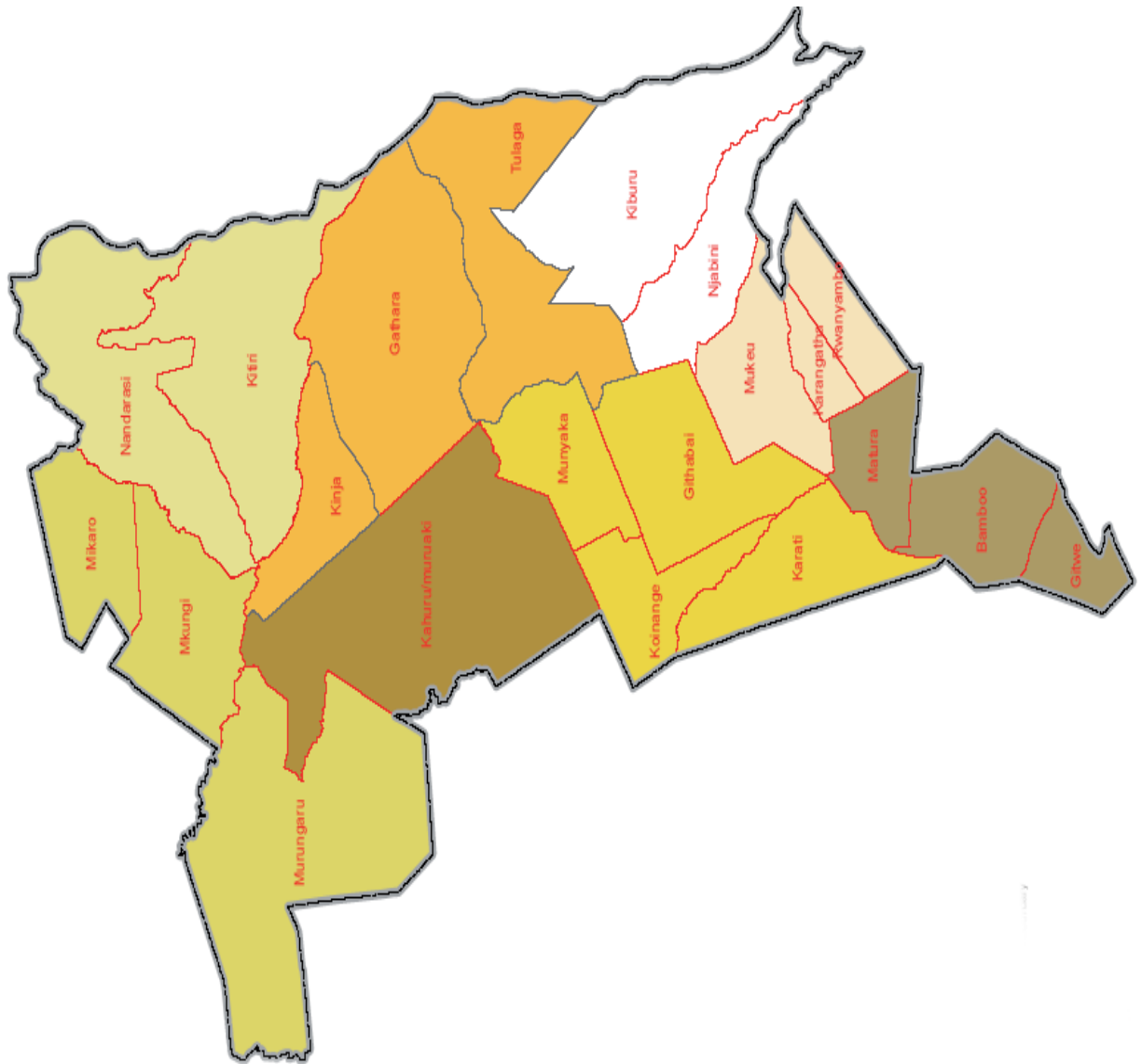
or no access to and control over land and other productive resources and services. This then constraints their role in production and marketing of the agricultural commodities.

Map of Nyandarua County



Source: Nyandarua CIDP 2018

Map of Kinangop Sub County



3.3 Research Design

The study employed a cross-sectional research design that captures information based on data gathered for a specific point in time. Qualitative methods of data collection were used. Data was gathered from men and women involved in potato farming in the six wards under the EGIA project, in Kinangop Sub County. FGDs, semi structured interviews, oral testimonies, key informant interviews and field observations were used to collect data. This triangulation of data collection methods was necessary to bridge gaps that arise with the use of single method. The methods utilized are participatory in nature and allowed participants to share their experiences.

Secondary data was equally gathered to inform background of the study, gain insight into the research problem as well as contextualize the stated objectives and to identify gaps in knowledge for previous studies done around gender and potato value chain. Secondary data review allowed for triangulation of data collected through field assessments and highlight differences. It also added depth to the primary data findings and helped build on the discussions that arose from the findings.

3.4 Study Population

Men and women who are involved in potato farming in Kinangop Sub County comprised the study population. The study sample was drawn from the six wards under the EGIA Project namely Magumu, Nyakio, Njabini, Githabai, Gathara, and Engineer.

3.5 Sample Size and Sampling Techniques

3.5.1 Focus Group Discussion

A total of eleven (11) FGDs were conducted in the six (6) wards. This comprised of two (2) FGDs per ward (male and female) and one (1) mixed group. This method of data collection was used to harness collective knowledge, opinions and perceptions from men and women involved in potato farming. An interview guide with discussion points was used to steer the discussion. Consent to take part in the discussion and record the proceedings was sought from the participants. They were also assured of confidentiality. The recorded audios were then transcribed in readiness for analysis.

A list of farmers from each of the six (6) wards under the EGIA project was obtained to serve as the sampling frame. Thereafter, stratification was done to categorize male and female farmers and a list drawn. From this list, names of the farmers were written down in a slip of paper and twelve (12) names randomly sampled. This was repeated until eleven (11) focus groups were constituted. Five (5) FGDs were carried in the GT-FFBS groups. These were held in Magumu, Nyakio and Githabai wards. From the FFBS groups, six (6) FGDs were held in Njabini, Gathaara and Engineer wards. The GT-FFBS groups have undergone trainings on gender, agronomy and marketing, while FFBS groups have been trained on agronomy and marketing only. The trainings are on the potato and garden pea value chain.

The size of the FGD was limited to eight (8) to thirteen (13) participants to allow for time and opportunity to share insights and to provide a diversity of perceptions. Demographic data which included age, marital status and level of education was obtained to help with the separation of responses during analysis. An interview guide (Appendix II) was used to steer the discussion.

3.5.2 Semi Structured Interviews

This tool was used to gather independent thoughts, opinions and perceptions of men and women involved in potato farming in relation to their participation in the value chain. The interviews allowed respondents to communicate their attitudes and beliefs. A questionnaire comprising both open and closed ended questions was utilized. The tool was subjected to a pre testing whereby sequence and clarity of questions was revisited.

A total of forty two (42) interviews divided into seven (7) interviews per ward (four female and three male) were conducted to gather a wide range of views from potato farmers. To identify respondents, a list of farmers in the GT-FFBS and FFBS groups from each ward under the EGIA project was obtained and used to serve as the sampling frame. Stratification was done to categorize male and female farmers. After the stratification, a list of names of farmers was drawn and their names written down on a slip of paper. These were then put in a box, mixed and forty two (42) names (18 male and 24 female) randomly selected. Consent to participate in the interview was sought from the respondents. A questionnaire (Appendix V) was used to gather information.

3.5.3 Oral Testimonies

This tool was used to gather historical perspectives on men's and women's experiences in relation to potato farming over time. It helped bring depth to our understanding of the past by carrying us into experiences at an individual level.

To conduct oral testimonies, an interview guide (Appendix III) was used to steer the discussion. A total of eighteen (18) interviews were conducted across the six (6) wards. Three (3) interviews per ward comprising of two (2) female and one (1) male were conducted. Consent to take part in the study and to record the interview was sought from the respondents.

A list of farmers from the six (6) wards under the EGIA project was obtained. From this, stratification was done to separate male and female farmers along the six (6) wards. A list was drawn from each ward comprising of male and female farmers. Two (2) females and one (1) male farmers with farming experience spanning 30 years and above were thereafter purposively selected.

3.5.4 Key Informant Interviews

These interviews were used to gather expert knowledge from the agricultural extension officers on notable changes in roles and responsibilities, impact of challenges on farmers' involvement in potato farming and interventions put in place by the ministry to address the challenges. The interaction involved sharing their experience on working with potato farmers in Kinangop Sub County.

A total of three (3) interviews were carried out with the informants who were purposively selected. These informants were drawn from the MoALF offices based at Engineer in Kinangop Sub County headquarters. An interview guide (Appendix IV) was used to gather the relevant information.

3.5.5 Field Observation

Field observation provided a means of triangulation by testing data observed against the respondents' responses. A check list of activities (Appendix VI) was prepared and used to observe roles and responsibilities of both men and women at the group level during the potato planting season. Taking part in this major activity of the farmer groups helped create a rapport with the farmers. Interactions between men and women were also observed at the group level. Verbatim conversations among the farmers were also noted.

3.6 Recruitment and Training of Research Assistants

Two enumerators were recruited to work along the student in gathering data. The enumerators are graduate students working with the Social Services Department in Kinangop Sub County. They are also well versed with the study area as well as fluent in English, Kiswahili and Kikuyu languages. They equally have basic skills in conducting interviews. The training of the enumerators focused on an overview of the study, data collection techniques, ethics and conduct as well as pretesting of the interview guide.

3.7 Data Processing, Analysis and Presentations

Data collected through focus group discussions, key informant interviews and oral testimonies interviews were audio recorded and transcribed. Notes were equally taken during the interviews. The coding process was done whereby reduction and reorganization of the raw data into manageable chunks of information done. This was eventually analyzed using the NVivo software. Nvivo helped organize and manage non numerical unstructured data from FGDs, oral testimonies and key informant interviews. Coding was done along themes established from the objectives. It further helped in separation of responses along variables such as age, marital status and level of education. Analysis of semi structured interviews was done using the Statistical Package for the Social Sciences (SPSS) software.

Verbatim approach using direct quotations has been used to present the findings in order to capture the perceptions of the participants as well as magnify their voices.

3.8 Ethical Consideration

The researcher took the necessary steps to safeguard the rights and sensitivity of the respondents. As such, the purpose and objectives of the research study were well explained to the respondents before the commencement of participation to the study. Respondents willingly participated in the study by way of signing a consent form to indicate voluntary consent. The consent form explained their rights which included privacy and confidentiality and the right to withdraw from the study at any point or decline to respond if uncomfortable with a question. Anonymity during the writing of the findings has been maintained.

The Sub County administration was also duly informed of the study, purpose and the target population. To aid this, a letter of introduction from the AWSC detailing the intention to carry out the study was delivered to their offices.

The knowledge contained herewith was obtained from potato farmers drawn from Kinangop Sub County and agricultural officers from MoALF in conjunction with CARE Kenya and AWSC, University of Nairobi. As part of accountability and fulfilling research requirements, these findings will be shared with the aforementioned.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results and discussions of the research findings along the three objectives. This study assessed the gender issues along the potato value chain in Kinangop Sub County.

4.2 Respondents' Demographic Characteristics (Bio Data)

This section presents the respondents' demographics in terms of gender, age, marital status and level of education. As shown in table 4.1, the average age of the respondents was 50 years, with the average number of years in farming being 20 years.

Table 4.1: Respondents Age and Farming Experience in years

Respondents Age and Farming Experience in years	N=36		
	Minimum	Maximum	Mean
Age	32	79	50.31
Farming Experience	7	40	20.11

Data (table 4.2) shows that majority of the respondents were married with a few separated. On education level, a majority had attained upper primary education. Only a few had attained college education.

Table 4.2: Distribution of respondents by demographic Characteristics

Variables N=43	Items	%
Education Level	None	2.3
	Lower primary	11.6
	Upper primary	44.2
	Secondary	37.2
	College/University	4.7
Gender	Male	44.2
	Female	55.8
Marital Status	Married	74.4
	Widowed	7
	Single	14
	Separated	4.7

4.3 Roles and Responsibilities of Men and Women in Potato Farming

The different activities carried out by both men and women along the three stages of potato farming namely production, harvesting and marketing are as shown in table 4.3. In addition, the study established reasons why the stated activities were specific to the particular gender in a household. The study further established who mostly carried out the particular activities regardless of whether he was from that household or hired labor.

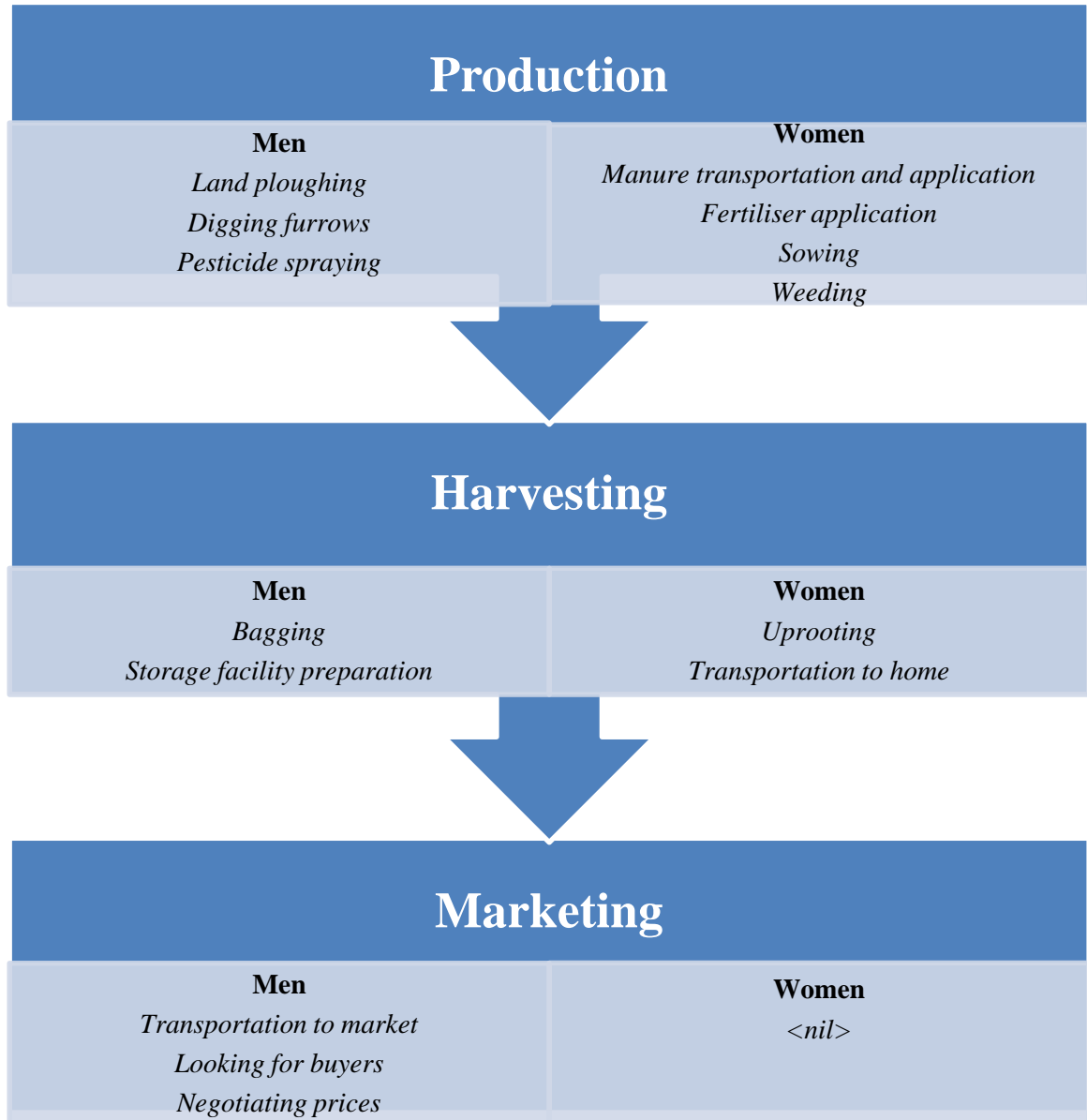
As demonstrated in table 4.3 below, fifteen activities are performed in potato farming. These fall into three nodes namely production, harvesting and marketing, each with its unique activities. Women mostly dominate activities around production node carrying out six out of eight activities. These include manure transportation, manure application, fertilizer application, sowing and weeding. Further, men dominate the marketing node carrying out all the three activities.

Table 4.3: Activities Carried Out by Men and Women in Potato Farming

ACTIVITY	Men		Women		Both	
	N	%	N	%	N	%
Production Activities						
Land Ploughing	35	81.4	5	11.6	3	7
Digging furrows	30	69.8	5	11.6	18.6	8
Manure transportation	10	25.6	26	66.7	3	7.7
Manure application	6	14	27	62.8	10	23.3
Fertilizer application	9	21.4	26	61.9	7	16.7
Sowing	2	4.7	36	83.7	5	11.9
Weeding	2	4.7	35	81.4	6	13.9
Pesticide spraying	32	74.4	8	18.6	3	7
Harvesting Activities						
Uprooting	0	0	22	51.2	21	48.8
Bagging	34	79.1	5	11.6	4	9.3
Transportation to home	13	30.2	21	48.8	9	20.9
Storage facility preparation	25	58.1	15	34.9	3	7
Marketing Activities						
Transportation to market	24	55.8	8	18.6	11	25.6
Looking for buyers	26	60.5	13	30.2	4	9.3
Negotiating prices	22	51.2	14	32.6	7	16.3

Observations around activities along the three nodes are also illustrated in the figure 4.1 below.

Figure 4.1: Domination of node activities by gender



Notably, men engage in activities around land preparation and marketing of the produce. It was also observed that of the activities where both men and women engage in, uprooting scored the highest at 46.8%. Reasons given to this are that men want to take

charge of the sales and so control the incomes accrued. Even when they do not engage in the uprooting, a majority will be found around homes on this day. However, from the focus group discussions, both male and female respondents were of the opinion that even though some men engage in the activity, women compared to men were more knowledgeable and better at harvesting. They also reported being more knowledgeable than men on when the crop would be ready for harvest “...even when they (men) assist us, they don't do it well...many times you find the potatoes they have dug out have cuts...and then they don't know how to sort out...so you are forced to come and sort what he has dug out...this doubles our work...female respondent, Magumu FGD...compared to men, we also know how to store seeds to sprout in readiness for planting...men in the first place do not know how to sort the seeds as we harvest...female respondent Njabini FGD”. This shows that women are indeed holders of traditional knowledge of practices that they engage in such as seasonal plant cycle calendar, production techniques among others, which leads to some sort of specialization (Agrawal, 2002; Ogechi, 2016).

It was also evident that, women are involved in activities that require bending and that are repetitive in nature such as sowing, weeding and manure transportation and application. Similar observations were made during the group planting season for potatoes held early in the year. Men repeatedly made remarks such as “...nyinyi (meaning women) harakisheni kukata mitaro...mnajua bado hamjaleta , mbolea (please finish digging the furrows quickly because you haven't even brought us the manure...)”.... “i do not know where I will sleep tonight because of bending...” These results resonate with Sikod (2007) where he notes that women largely engage in activities around weeding, harvesting and transportation of produce from farm to home. Similarly, these findings resonate with the writings of Nguyen et al (2016), where men tend to carry out activities that are physically demanding and “heavy” such as land preparation, pesticide application and manual threshing. Women on the other hand, engage in what they perceived as “light” activities such as transplanting, weeding, harvesting and transporting. While the activity of bagging may connote control, men also carry it out on the basis of it being a light duty as it does not require bending. Notably from Table 4.3, men begin taking charge of activities of bagging to negotiating for prices at the marketing node.

“..... Let’s say all the hard jobs are done by men. Even if a woman does it, she can’t do it for long. Men do the hardest jobs. Then when it comes to planting, sowing, carrying manure which are all easier jobs, women will do....Even weeding is done by women...(male respondent Magumu FGD).We have ensured that we help women when it comes to all the heavy and manual work such as land tilling and digging of furrows....you see women have not been created to do such heavy work...(male respondent Gathara FGD).”

These male voices capture Betty Friedan assertions of men being the sources of public knowledge about women and at the same time making pronouncements about women (Spender 1985). Men in this study area have assumed that women are fine with this state of affairs. Spender also observes that to know about women, Betty Friedan went to women and studied women’s experiences. Women’s voices were therefore sought on men’s assertions that the work they do is “light” while men’s work is “heavy”. Women expressed dissatisfaction and that men hide in the name of their physique which does not allow them to do “light” jobs that require bending. From the discussions, it is clear that these kinds of stereotypes and beliefs have served as impediments to addressing the blatant inequalities that exist among the rural agricultural communities. Female respondents felt that nature as well as culture and societal norms have been blamed for men’s inability to carry out activities around bending such as weeding yet this is not true *“...I don’t believe men cannot bend...they are just being selfish...anyone can bend...how come when you employ them as casual workers they do sowing and weeding?...it is not that they cannot bend....female respondent, Gathara FGD....i think they use this (culture) to oppress us...they can also bend...although some are just lazy...female respondent, Nyakio FGD”*. From these voices, there is an understanding from some women that gender roles are indeed cultural which can be changed and that there should be fairness in work distribution between men and women. While these voices may be few, they point to women reaching a level of conscientisation as presented in the Longwe’s framework (Longwe, 1994). Otherwise without reaching this level of equality, culture will continue to act as a channel whereby unequal division of labor is advanced.

Similar to Abate’s (2017) observations, the research findings show that the division of labor in this area is largely traditional and unequal whereby men mostly undertook activities around land preparation and less of work that required bending. These findings also echo those of Jeckoniah et al (2013) where land tillage is largely a men’s activity at

71.4%. Leavens and Anderson (2011) make similar observations where women in Tanzania take charge of weeding, harvesting and storing as men tend to assist in land clearing and preparation as well as other heavy labor tasks.

A study by Sah et al., (2007), in India observed a similar trend where women were more engaged at the production and harvesting stage of potatoes. Men on the other hand were more involved at the marketing stage. However, notable was that contrary to the findings by Abate (2017), where men mostly carry out sowing, this study's findings indicate that this work is mostly carried out by women. It was reported that males who do sowing and weeding are mostly casual labors and not necessarily family members. This could be explained by the fact that men tend to carry out activities regarded as feminine when such work attracts payment (Jeckoniah et al 2013).

Focus group discussions revealed that younger men also carried out sowing and weeding activities at their farms contrary to older males “.....*these days we also help our wives with work such as sowing and weeding...we can't leave all the work to them...young male respondent, Njabini FGD.*” This could be explained by the changing trends as a result of gender awareness and education of the need to address and correct inequalities that leave women more burdened. Longwe's framework speaks to the awareness that gender roles are cultural and can be changed at the conscientisation level (Longwe, 1994). There is also a likelihood that these stereotypes and perceptions are weakening as a younger generation gets more involved in agricultural activities. Concurring with these findings, oral testimony interviews alluded to the fact that younger men are slowly engaging in activities that were predominantly female. This could also be explained by the fact that Irish potato is now a cash crop in this region controlled by men.

“...there are a lot of changes in the way potato farming is being done...a while ago you could not find men doing work such as weeding...these days you find those that are young are now doing the work...Elderly female respondent Njabini OT”

In response to how they carried out the different activities along the three nodes, both men and women respondents revealed that roles carried out by men are those that are likely to use both light and heavy mechanization such as tractors, draught animals and

knack sprayers. These activities include land ploughing, digging furrows and pesticide spraying. It was also notable that a percentage of men transport manure if they have donkey carts. This they stated they only do if they have donkey carts while women on the other hand transport on their backs. Female heads of households are less likely to adopt agricultural technologies compared to male heads (FAO, 2014), yet these technologies have been linked to improved agricultural productivity. The FAO report further states that these gender differences in use of and adoption of labor saving technologies is as a result of cultural appropriateness, physical accessibility and affordability. In Kinangop, women cited affordability due to low incomes as the main reason why they do not use mechanization. Indeed, single women stated that the cost of hiring tractors to do ploughing was way higher than they could afford “...you see, hiring of a tractor is very expensive and some of us here cannot afford...so we just do it manually...single female respondent, Gathara FGD”. Other reasons given were small land sizes that do not support use of tractors.

Use of draught animals such as donkey carts was similarly more reported among male headed households than with female headed households. Donkey carts are mostly used in this study area to transport farm produce and manure. But as noted from the discussions, affordability is the main reason female headed households do not own “...buying a donkey here is quite expensive...they cost up to Kshs.8000...now, how many can afford such?...female respondent, Njabini FGD”. As such, they transport manure on their backs unless one can afford to hire the services. FAO (2014) states that men take charge of factors of production and so control use of technology. Taking into consideration the farm activities that utilize mechanization in this area, it is evident that it has almost exclusively benefited men more than women. Yet as Ogechi (2016) observes, mechanization would be a great means of freeing women from the time consuming and repetitive work to work elsewhere for cash or food which is a coping mechanism for rural communities.

Oral testimonies revealed that Irish potato which was traditionally considered a women’s crop, has increasingly been taken over by men who dominate the marketing stage while women mostly provide labor. This consequently leads to a control of incomes accrued

from sales of produce “...women and girls mostly worked in the farms and grew potatoes mainly for consumption while boys and their fathers herded goats and sheep...but things changed when we started growing potatoes for commercial purposes... I started seeing my father more involved (in potatoes)...OT male, Magumu ward.” This change has led to a change of roles where women have been relegated to activities around production node. Though the crop was not commercially grown, discussions reveal that women sold the surplus to cater for other household needs.

Literature has shown that crops that were traditionally grown as subsistence crops by women have shifted to both men and women for its cash income and profitability (Doss, 2001; Okonya et al, 2019). Men were also found to control cash related decisions and marketing of the produce. This is true of potatoes in the study area which was primarily grown for household food but is now considered as a cash crop since it is often sold for cash. This has considerably led to women losing the decision making power around use of incomes accrued. Women in this study area dominate the production node while being holders of traditional knowledge at the harvesting node. This notable change is as a result of the shift of potato from subsistence to cash crop.

On the marketing stage of this value chain, it is evident from Table 4.3 that men are in control. These observations are in line with those of Mittal et al (2008): citing Tiruneh et al, 2001; where women were found to have limited role in marketing of the produce with most of their activities concentrated at the farm level. There was a general agreement among the respondents that looking for market/ buyers is mostly done by men since they also control incomes. Female respondents were of the opinion that men who may have shown disinterest in the earlier two stages, suddenly make a comeback at the marketing stage and are now actively looking for buyers. However, they indicated that there is a notable change in the numbers of women breaking into the marketing node which is majorly male dominated. This could be an indication that women in the study area are beginning to operate at the conscientisation and participation levels whereby their self-confidence levels have increased as well as their capacity to participate in decision making processes (Longwe, 1994). Formation of marketing committees within the EGIA project which comprises both men and women was cited as having contributed to this

behavioral change. Women in this study area are also slowly breaking barriers of societal and cultural expectations that prevent them from achieving levels of decision making. These barriers as noted in the Pathway's Theory of Change obstruct gender inequalities.

However, opinion was divided as to who negotiated for prices. Some respondents opined that it was women who negotiated for prices as they were better at this compared to men. Probed, female respondents felt that men were quicker to sell off the produce which they (women) had labored hard to produce without putting into consideration the cost of production. This rush to sell off produce could also point to men's control over incomes accrued. While this could be true, an increase in levels of awareness and empowerment programs in place may have contributed to this trend being witnessed in this study area.

The research study further sought to find out the impact of the unequal gender division of labor coupled with societal norms and perceptions on women's involvement in potato farming. From the discussions, it was established that this traditional division of labor has situated women in a scenario where they are constantly burdened with house chores and farm activities. Some female respondents admitted the work load is heavy but had no choice. Women opted to carry on with the activities to maintain a "harmonized family" at the expense of sharing the roles. This they explained to mean peace and free from small fights. These societal norms and expectations have left Kinangop women to solely shoulder this responsibility.

"...what will we do? We get tired of course...but are you now going to abandon your farm and family...? Women are the pillars in families and so you can't abandon your work...female FGD....a good woman builds her home...young female respondent, Githabai FGD....the wise woman is the one who maintains harmony in her home....older male respondent, Magumu FGD".

From these voices, it was clear that societal norms have remained an avenue for perpetuating the unequal division of labor.

4.3.1 Summary of Findings on Roles and Responsibilities

Men and women in the study area actively take part in potato farming though the extent to which they do so vary with gender. Men mostly engage in activities around land preparation, pesticide spraying transportation and bagging. Notably, these activities are done through mechanization which men control. Men also dominate the marketing node

by way of looking for buyers and negotiating of prices. This connotes a control over income arising from sale of produce. Women on the other hand are heavily involved at the production and harvesting node. Activities include manure transportation and application, fertilizer application, sowing, weeding and digging out of potatoes. These are roles that do not necessarily require mechanization and are also repetitive in nature.

To some extent, division of labor in the study area is still largely traditional. It is however notable that women are beginning to challenge these gender norms and unequal power relations and demanding an equal place with men. This point to the fact that women are beginning to operate at conscientization and participation levels of equality.

4.4 Challenges Faced by Men and Women in Potato Farming

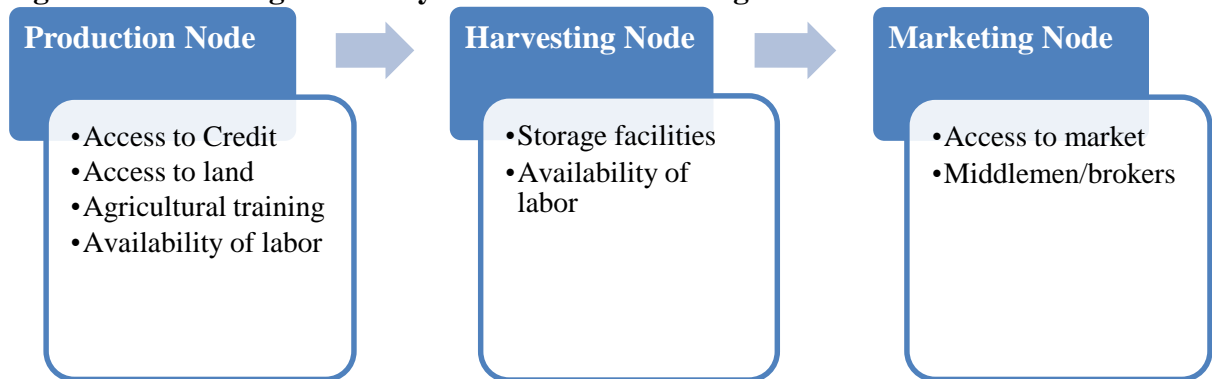
The study sought to establish the challenges that potato farmers' face and which inhibit involvement and growth in this value chain. The aim was to bring out the gender related issues among men and women involved in potato farming. Probing was done along access to and control over productive resources, value addition, access to loans, storage facilities, extension services, skills and training, access to markets and labor.

Respondents were asked to list challenges they faced. Below are the frequently mentioned challenges on all the three stages.

Table 4.4: Challenges Faced by Men and Women

Node	Challenge	Responses male	Responses female
Production	Access to credit and capital	19.7 (n=38)	18.7 (n=41)
	Access to land	16.1 (n=31)	17.3 (n=38)
	Agricultural training	11.9 (n=23)	14.6 (n=32)
	Availability of labor	10.4 (n=20)	10.5 (n=23)
Harvesting	Storage facilities	50 (n=24)	46.7 (n=28)
	Availability of labor	14.6 (n=7)	11.7 (n=7)
Marketing	Access to market	72.2 (n=39)	67.7 (n=42)
	Middlemen/brokers	5.6 (n=3)	6.5 (n=4)

Figure 4.2: Challenges faced by men and women along the three nodes



From table 4.4, it is evident that at the production node of the value chain, availability of capital was listed by majority of the respondents. Other challenges that were frequently mentioned by both men and women include access to land, credit, agricultural trainings and availability of labor. Lack of storage facilities scored the highest at the harvesting node, while marketing node showed that access to good market was the biggest challenge. Other challenges mentioned in lesser frequency by both male and female respondents included lack of certified seeds, inputs, farm machineries and low prices of produce.

Analysis of the above results will be presented using the Women's Empowerment in Agriculture Index (WEAI) tool which is designed to measure the empowerment, agency and inclusion of women in the agriculture sector in a way to overcome those obstacles and constraints (Alkire et al., 2012). Additionally, the extent of women's engagement is measured using five domains namely decisions about agricultural production; access to and decision making power over productive resources; control over use of income; leadership in the community and time use.

This section will focus on findings around access to and control over productive resources as an indicator whereby access to and decisions about credit will be discussed. Further, ownership of land in addition to decisions regarding purchase, sale or transfer of land and assets will be discussed. Verbatim conversations from the FGDs, oral testimonies and key informant interviews have been used.

4.4.1 Access to and Decisions about Credit

According to Alkire et al, (2012), access to and decisions about credit examines decision making about whether to obtain credit and how to use the proceeds from credit from various sources such as nongovernmental organizations, formal and informal lenders, friends or relatives, rotating savings and credit associations.

While concurring with the responses of the semi structured interviews, focus group discussions and key informant interviews revealed that indeed access to credit was a challenge to both men and women in this area. “...*getting credit from banks is hard...we normally try to borrow from friends or from chamas though the amounts are not so much...some of us don't even have bank accounts...female respondent, Njabini FGD...most of us men are not in self-help groups like women...then when you want to borrow from the bank they require you to have savings which we don't have...male respondent, Gathara FGD.*” This as they indicated affects purchase of inputs such as certified seeds, fertilizers and hiring of farm machineries such as tractors that ease their work. This as a result affects the crop yields. KEPHIS (2016) states that potato yields are on the decline due to poor use of inputs and certified seeds.

As earlier on noted, women are majorly positioned at the production node of the value chain. This may imply that the challenge of access to better financing affects them greatly. All the same, female respondents mentioned that women majorly accessed loans through the informal lending institutions such as saccos, table banking and merry go round “...*like now in our group you can even get up to like Kshs. 10,000...though this money also goes into meeting other household needs...we do not use all of it on farming activities since we also have other needs like school fees, medical...female respondent, Magumu FGD.*” From the discussions, it was evident that a majority of women have benefited from these institutions in accessing small loans though not much is invested in farming activities. Women have kept away from the formal lenders owing to lack of collateral and high interest rates. The challenge of interest rates was also mentioned by male respondents as one of the reason they shy away from the formal lenders. Farmers are equally not assured of a good crop yield coupled with fluctuating prices. They also stated that failure to have organized marketing groups and cooperatives such as those

from the dairy sector has robbed them of the opportunity to be financed by the finance institutions. These associations play an important role in enhancing the bargaining power for their members.

“...you see, we do not have a body that markets our produce...and also sometimes we experience crop failure...so banks cannot finance us...you would rather take the loan from a group male respondent, Gathara FGD.....we also fear taking up loans because of high interest rates and sometimes you do not get a crop harvest...some people have even been auctioned...male respondent, Magumu FGD”

“....even now getting credit is still challenging...I think in the past people were more faithful such that when you lend to someone they would repay...these days unless one borrows from groups or go to the bank...and you don't have collateral...female OT Njabini”

While agreeing with these sentiments, key informants further stated that VSLAs were not able to lend much to the women since the contributions are also minimal. These associations may have succeed in bringing women together and providing them with safe places to save and access small loans to cover expenses such as school fees and other household expenses, but as reported, they are not able to borrow substantive amounts that would enable them expand their farming. From the discussions, it was evident that the farmer groups which have been used as avenues to offer trainings related to production and marketing of potatoes, have increased women's knowledge in other areas such as savings and credit acquisition *“....now we are learning that it is important to save even if the money is little and be able to borrow later...although what we borrow is very little...female respondent, Njabini FGD”*. An opportunity exists in positioning of these farmer groups as marketing groups to help them bargain for better prices. They could also be used to access better financing from the financing institutions.

Though some women have been able to access funds through initiatives such as Uwezo fund and Women Enterprise Fund, the numbers of women in a group are too many to get any meaningful amount that would help advance their farming ventures. Further, loans acquired through these schemes are usually diverted to meeting other household expenses as reported by some female respondents.

While the challenge of accessing credit and capital cuts across gender, use of the advanced loan was reported to be a challenge that some married women have had to grapple with. Yet for the unmarried they reported autonomy in decisions around utilization of the credit. Rathirane and Semasinghe (2013) note that access to microfinance and ability to make decisions regarding utilization of credit is a good indicator for women empowerment.

“..you find that when you are applying for that loan you are together...but once you get the money, he changes his mind and diverts the funds to something else. Then when it comes to repayment it becomes a challenge for you as a woman...married female respondent, Gathara FGD.”

“..when he sees you have brought the money, he is even the one who decides how it will be used...but he will not be with you at the time of repaying....yet he is the one who asked you apply for the loan..female respondent Gathara FGD”

“...sometimes as married women we have no control on how income will be used...when we sell potatoes, he is the one who decides how the income will be used...this makes me feel very bad because I also worked very hard...married female respondent, Magumu FGD”

Some women reported having to be auctioned and losing their savings in groups when they fail to make loan repayments. This compromises their social status in the community and as a result, most shy off from applying for loans “....you know it is very shameful to be auctioned in full view of your neighbors...female respondent, Magumu FGD” Social empowerment for women occurs when they feel they can participate in collective activities in the society and when they can intermingle freely with others (Rathirane & Semasinghe, 2013).

The challenge of access to and decisions about credit limits the performance of rural women in food production. Some cited that due to this constraint, they can't access farm machineries such as tractors, farm inputs and certified seeds which are all a precursor for good crop yields. Fabiyi et al (2007) makes similar observations in a study in Nigeria where women have little access to capital and other assets that make agricultural production easy and profitable. Women farmers were found to have no collateral and so were unable to access bank loans. A majority accessed loans from cooperative societies. The findings also concur with Mare's (2017) where rural women are restricted by social-

cultural and institutional constraints leading to women having no control over the money taken as loan. Female respondents felt the lending institutions were far off located coupled with fiscal regulations. This made women opt for the informal institutions.

“...sometimes you find those banks are far from where we live...like now this place (Nyakio) is far from the big towns where the banks are located...female respondent, Nyakio FGD.”

The above voices are echoed in the IFC (2016) report that women farmers tend to have limited access to financial services that prevent them from purchasing critical inputs and equipment to enhance their production. The same is cited by Flavia et al. (2015), where affordability of equipments is unlikely due to financial challenges. Mechanization of the production node may remain a challenge for women who dominate this node.

These challenges as stated by a key informant impact on the ability of women to farm large scale and as such only do subsistence farming. They are also unable to put into practice the good agricultural practices taught due to lack of capital to purchase the necessary farm inputs. Discussions with key informants alluded to the fact that a majority of farmers were unable to put into practice skills learnt due to the challenge of capital. As noted by Adenugba and Mustapha (2013), availability of credit is essential for improving productivity and enhancing incomes.

4.4.2 Access to and Control Over Land as a Productive Resource

Land being a major productive resource is a key determinant through which rural women negotiate their livelihoods (Paul and Rani, 2016). Table 4.4 indicates that access to land in this study area was a challenge. Responses around this revealed that a majority of women do not own land jointly and that control was a challenge. Though both male and female respondents cited access to land as a challenge facing them, the discussions revealed that men are affected to a lesser extent compared to women due to the existing social cultural norms. Observations made during the group planting season for potatoes early in the year showed that demonstration plots were either located at the male headed households or female headed households. None of the married women hosted the plots. Probed, they mentioned that since men control land, it was difficult to convince their husbands to give away land for group trainings.

Challenges facing rural women farmers are interwoven. Lack of a land title might imply that she may not be able to access bank loans and so may not purchase the required inputs to boost her crop's productivity. However, women in this study area have navigated this challenge by utilizing the informal lending institutions to access financing.

Asked to respond on why they felt land was a challenge, male respondents spoke from the perspective of smaller sizes of land that fail to support their farming expansion plans and large scale farming.

“...these days, land sizes have really reduced due to subdivision...and because of that, you find that we are not able to hire tractors to do ploughing...operators of these machines claim that tractors consume a lot of fuel if the shambas are small in sizes...male respondent, Magumu FGD.”

On the other hand, female respondents mentioned that though titles were in their husbands' names, this did not hinder most of them from cultivating with the exception of a few. This means that access to land is not a challenge for most women in this study area. However, the question of control and input into decisions around disposal of the assets arose. Female respondents mentioned that the District Land Boards have cushioned them from sales that would exclude them. They therefore did not feel that this was a major challenge. A majority of the respondents were satisfied with the status.

“...God first created man and gave him authority...then he created the woman...so as the men have said, what belongs to the man is his wife, children and land. Then when it comes to the title, land belongs to the man... the bible states that women should follow the man. But now what happens is that when you get married, the title belongs to the two of you...if he has a title then there is no need to change... so long as he can allow me to cultivate...but if we buy land after getting married, then our names should appear both on the title. So we can't start telling our husbands to change the titles...you can be beaten...it is not possible...(female respondent Githabai FGD).”

These sentiments which were shared by several female respondents in one FGD speak to conscientisation level of equality under the Longwe's framework. It shows that these women may not be aware of benefits that come with joint ownership of land which includes access to financing and input into decisions.

Male responses on the inclusion of their wives' names on the titles exposed very deep cultural traditions and practices especially among the older men.

“...like now I have land, then I'm supposed to have my wife's name on the title?...no...that is not possible...even my father did not do it....let her wait until I die then she can have the title...male respondents, Githabai FGD”

“...if you include your wife's name on the title, what will happen if she runs away? Will you keep changing...land belongs to the man...male respondent, Githabai FGD”

“...you can't trust a woman to even wash your shirts well....so why should I give her the title to keep? ...you can't because she won't keep it well...male respondent, Magumu FGD”

The above sentiments are an indication that customary and religious practices have resulted in unequal land ownership rights for women in the study area and which make it difficult to empower women as farmers. They also point to societal perceptions that project a woman as untrustworthy to be entrusted with valuable items such as a land title. Men in this area portray women as unstable and can walk out of a marriage anytime.

A number of cases were reported where women had been denied access by their husbands or male relatives for the unmarried. These sentiments are indicative of men using their position to control incomes accrued from sale of crops (Alkire et al., 2012). *“..She came to me crying that her husband has denied her a section of land to farm...because when she sold the peas she had cultivated, her husband claimed she didn't share the income with him...male respondent Gathara FGD.....Right now, the piece of land where I have built belongs to my son and any anytime she can come and ask me to move out...i helped my daughter buy a piece of land, my sons have refused to let her farm on that land...they (sons) have insisted there is no way their sister can inherit from me...now she has been unable to cultivate (female OT).”*

It is such norms that must be addressed to ensure a lasting transformation where women can equally access resources to boost their productivity (Pathways Theory of Change). A study by Ajadi et al (2015) points to the role that culture plays having a stronger influence on women's access to and control over productive resources rather than mere differentiation of gender into male or female.

Notably, women in this study area are aware of the existing land laws and provisions such as land inheritance by female dependants but cultural norms and traditions have sometimes made it impossible for them to realize this right. Yet these law provisions are a channel for women to realize their human rights. While some women have been beneficiaries of these provisions allowing them to inherit from their fathers, a majority reported that the dwindling land sizes had made it impossible for them to inherit.

“...you find the piece of land is so small that there is no need to keep fighting for it with your brothers...female respondent, Gathara FGD.”

They therefore reported foregoing such so as to maintain peace and harmony, an attribute given to women through socialization. Others reported being coerced by their husbands to dispose off land allocated to them by their fathers. Male respondents claimed that women cease to be loyal and start disrespecting them. They also prioritize their land over their husbands. As such there is no harmony at home. Female respondents who had acquired other assets such as dairy cows also reported coercion from their husbands to sell off the livestock. Men do not want to be seen to be dependent on their wives to support their families and so water down one’s manliness in the community.

“...a woman is supposed to look up to the man and not the other way round...elderly male respondent, Magumu FGD.”

Studies have shown that men are largely responsible for the purchase and sale of land and livestock such as cows (Ahuja & Redmond, 2004). This means that men have an upper hand to purchase and dispose at will, a position that limits women’s ability to exercise any form of control. In interrogating access to land for rural women, Sikod (2007) makes an observation that majority of women have only user rights over land and could not dispose it. Women in this study area have reported having user rights and equally felt the law protects them from sales that might exclude them. Without a fair control over productive assets, realizing gender equality is a tall order and so their input in alleviating poverty is minimalized.

4.4.3 Access to Agricultural Training and Extension Services

The changing weather patterns such as erratic rains, prolonged drought, etc, form part of the uncertainties that the agricultural sector grapples with. Access to agricultural trainings and extension services aimed at circumventing some of these challenges together with

good agricultural practices are major ways of realizing good production for rural farmers. Yet this remains a challenge mostly experienced by the women farmers compared to their male counterparts. Women are therefore unable to fully benefit from improved agricultural practices and proper use of inputs. While studies (IFC, 2016; Pooja et al, 2016 and Mare, 2017) have cited lack of formal schooling and low literacy levels among women as the reason why they do not access these services, findings in this study indicated otherwise. A majority of the respondents had attained upper primary education and above. Female respondents reported heavy workload as the main reason why they did not attend the trainings. This resonates with Okuthe et al., (2013) where he established that women in Ndhiwa Constituency failed to attend trainings as a result of household responsibilities. Other reasons cited include failure to get information on time and such events being held far from their localities.

“..it’s not that we don’t want to attend...we have so many responsibilities at home...then you find the trainings are held at the county’s headquarters which is far and you don’t have time to attend...female respondent, Githabai FGD”

“...we are unable to attend because sometimes the information does not reach to us on time..you find that announcements are done at the shopping centers...as women we rarely frequent the shopping centers...we have so much work at home...female respondent, Githabai FGD”

“...i think men are more skilled than women because they have time to visit the shopping centers and that way they are able to gather and exchange information...female respondent, Nyakio FGD”

From these sentiments, it is clear that the multiple roles of women both at home and farm restrict their time and mobility to gather crucial knowledge and information that would increase their crop yields. Low crop yields impacts negatively female headed households making them more food insecure compared to male headed households. A study AWSC on the status of food security in Kenya revealed that female headed households were more food insecure.

As reported, the EGIA project has helped bring this crucial service to the farmers though this benefits those under the project. The discussions also aroused the issue of women’s mobility and its effects on women’s failure to access agricultural trainings. Restricting

women's movement either by coercion or by heavy workload denies women the much needed opportunities.

Moser (1989) while writing on women's triple roles has argued that the primary responsibility of women includes reproductive roles, productive roles and communal roles. Women then become constrained by the burden of simultaneously balancing the triple roles. It is because of these constraints that women may find themselves with no time to attend informative forums that have an eventual impact on their agricultural productivity that would lead to having families that are food secure. Faced with this dilemma, rural women will opt to give precedence their reproductive roles at the expense of productive roles.

4.4.4 Challenges at the Harvesting Stage

The study sought to establish the challenges men and women encounter at the harvesting stage of potato farming. The four data collection tools utilized in this study gave similar results with storage facilities scoring the highest at 50% for men and 46.7% for women. The challenge of lack of storage facilities cuts across gender. These results are presented in Table 4.4

Participants opined that lack of storage facilities and the perishability nature of crops such as potatoes forces farmers to sell off their produce while still in the field leading to exploitation by traders “...*here in Kinangop we have a serious challenge when it comes to storage...the government should help us with this...otherwise we are forced to sell our produce at a throw away price....male respondent, Nyakio FGD.*” These findings echo those of Tiay et al. (2016) where he reports a lack of adequate storage facilities being one of the biggest challenge facing potato famers. Farmers in this study area lack post harvest processing equipments such as those for value addition, a situation that further leads to losses of produce especially when there is a glut. Farmers therefore do not benefit from off season sales when prices are higher. The few processors in this area have set high standards in terms of quality of potatoes which most farmers complained they are not able to meet. Storage capacity of these processors also does not meet the demand. Indeed a majority of farmers did not know where these processors are located. Theft cases are

frequently reported in this region which is another reason why farmers harvest before their crop is ready. This leads to post harvest losses due to rotting.

Discussions with one key informant revealed that storage is indeed a challenge for the potato farmers but that plans were underway by the County government to actualize this. Interventions around post harvesting stage are often rare as noted on a report by IFC (2016) with most of them situated at production and marketing stages. This affects especially commodities that are highly perishable such as potatoes. This therefore presents an opportunity as stated by the farmers to help them grow in this value chain.

Focus group discussions with female respondents revealed that some men showed up at the harvesting stage even when they have not been involved in the activities at the production stage

“..you find when it is time to harvest he is the one to tell you that the crop is ready and that he has already looked for a buyer.....he will even help you to dig out the potatoes...and then he wants to sell at throw away price yet I have labored all along...he comes and takes over and I feel very bad about this...sometimes I feel like I don't want to farm again...female respondent, Magumu FGD.”

“..I wish my husband would be involved from the start to the end...this idea of showing up when we are harvesting is very discouraging...then he comes and wants to keep the money...female respondent, Gathara FGD”

IFC (2016) report posits that women are likely to be left out in sales even when they have put in considerable input in terms of labor. The sentiments also echo Jeckoniah et al.,(2013) findings where men undertake activities deemed feminine if the work attracts monetary gains. This is not only demotivating to women but also speaks to the disadvantaged position that rural women often find themselves in a monetarized economy with men taking charge of such.

4.4.5 Challenges at the Marketing Stage

This study engaged potato farmers with the aim of finding out the challenges they encounter at the marketing stage of potato farming. Results presented in Table 4.4 indicate that access to market was a challenge faced by both men and women at 72.2% and 67.7% respectively. The findings are indicative that this cuts across gender. This is occasioned by middle men who have taken over the sector and offered prices way below

the cost of production for that commodity “...we really wish we could find good market for our produce...brokers have taken advantage of us...male respondent, Nyakio FGD”

While some studies (Doss, 2016; CGIAR, 2016) have indicated that women encounter social structures that make it hard for women to negotiate and bargain with male traders, this research findings showed otherwise “...we do not experience restrictions from our husbands...they have no problem with us interacting with buyers...female respondent Gathara FGD”. From the voices of these respondents, cultural restrictions that hinder women’s movement and interactions with male traders are rare in Kinangop. What ails them much is not lack of market information but a lack of enforcement of the regulations in the potato sector. Both male and female respondents stated that they were aware of the regulations but felt the authorities were reluctant to enforce them.

4.5 Social Cultural Factors

In addition to the previous objectives, the study aimed at establishing the social cultural factors that influence the participation of women in Kinangop in the potato value chain. Hence, discussions in this section revolved around decision making around production, control over use of income, leadership and time allocation. These findings will be presented using the WEAI tool.

4.5.1 Decision Making Around Production

According to Alkire et al. 2012, this indicator measures autonomy in decision making and input into productive decisions. He argues that an individual has autonomy if their actions are motivated by values than by coercion. This study established how decisions are made around production and how women participate in decision making around production. Decisions around production included what, when and where to plant, use of inputs, use of machinery and donkey carts, when to harvest and where to sell the produce. It would be expected that since women play a major role in farming activities, they would be highly involved in decision making processes around agricultural production. In this study area, both males and females reported that decisions are majorly made by men though some women have an input into the decisions. Women reported mostly participating in decisions around when and where to plant, when to harvest. Other

decisions made by women are around garden pea which is mostly considered a woman's crop. A majority of men mentioned that they had left garden peas to the women to manage. Decisions around use of inputs, use of machinery and where to sell the produce were mostly made by men. Notably, the decisions that men make are around areas they control of incomes and technology. Unmarried women reported autonomy in decision making around production.

“...decisions are made by both but mostly it is the man because he is the head. The neck has never been above the head...male respondent, Njabini FGD)...he is supposed to tell me what to do because I'm the neck and he is the head...even if we go back to the Bible...female respondent, Githabai FGD...when satan is visiting a family, he starts with the woman...it is in the Bible how the woman was cheated...the word of God states that a man was created in the image of God and there is no way she can be above the man...so I make decisions...women have very many sins...male respondent, Magumu FGD.”

These comments cast light on the role that religion plays and its misconception that leads to the subordination of women. Religion is therefore viewed as a barrier to women taking part in the decision making processes. The findings are also indicative of a hierarchical manner in which decisions are made putting women on the receiving end of patriarchal norms. The man being the head of the family makes the decision and then informs the wife who in turn implements the directive from her husband. These power relations undermine women's participation in decision making both at home and at the community level. Such structures speak to CARE's Pathways Theory of Change where they act as barriers that hinder gender equality at the household and community level. Yet addressing these unequal power relations is a precondition for women to access resources and opportunities to improve their productivity. Longwe's framework states that enabling women to take an equal place with men and participate equally in development process is a marker for women empowerment (Longwe, 1994). From the voices of women in this study area, there is a need to still increase their participation in decision making processes.

Married women who reported input into decision making attributed the changes to trainings around gender relations through interventions such as the EGIA project *“...these days we feel our husbands are listening to us and involving us in decisions unlike in the*

past...our men are now changing...this project (EGIA) has really helped us...especially those of us with husbands who are part of this project ...female respondent, Githabai FGD.” Considering women’s position in the past, male respondents admitted that women engaging in the potato value chain development activities had become more enlightened and demanding their place in the decision making processes even at the group level, something they were not able to do before. However, these changes could also largely be attributed to the changing trends as a result of education and a general increase in awareness of the inequalities that women face and the need to correct them. This is reshaping the decision making process within households. The increased participation of women in the household decision making was perceived as empowerment by female respondents. This therefore means that women’s self confidence in this study area is increasing enabling them to take part in decision making processes at the household level and at community level (Longwe, 1994). Interventions targeted at both men and women in the community could therefore be great avenues to ensure women inclusion in decision making processes.

The question of little or no involvement in decision making around production and how this impacted on women’s participation along the value chain was raised. It was notable that women portray resilience in the wake of such inequalities choosing rather not to abandon their chores and to keep engaging the men. Behavioral changes witnessed to a considerable extent are a motivation to women. Nevertheless, they hoped that social interventions would target both men and women as this had a greater impact on men “*...those whose husbands are part of this project (EGIA) can testify of changes in the way decisions are made....but out there things are different...male respondent, Githabai FGD.*”

4.5.2 Control over Use of Income

This domain measures the degree of input into decisions about use of income accrued from sale of food crops and cash crops, and the extent to which an individual feels they can make personal decisions regarding household expenditure (Alkire, et al, 2012).

Participants were asked to state who controlled incomes in their households and whether they had input into decisions around use of income. Comments on this paint a picture of deep cultural perceptions and attitudes that some men have towards women as lacking good skills in expenditure. It also revealed that most men desire to maintain their position in the household and society as the bread winners. They claimed that women become disrespectful when they earn more than them. This was notable with the older men. Younger men were of the opinion that involving women in decisions around use of income brought harmony at the household level.

“...women have no ideas on income expenditure... they only want to keep consuming little by little...male respondent, Magumu FGD. ...wanawake wako nyuma sana (women are so “behind” in some things)...and unless you educate her...things will not change...my wife has nothing of her own...she has to ask me for money...in my house I have only one outlet of money which I control...and we live in harmony....male respondent Magumu FGD.”

Such sentiments show the misconception men have on the importance of living in harmony at the expense of women having no voice in use of household incomes and expenditure. This inability to input into decision is not only oppressive but also leaves many women helpless and only comply for the sake of harmony in the family. A lack of control of incomes that women have labored to earn is an undervaluation of their productive work.

Asked whether they feel they participate in decisions around use of income accrued from sale of potatoes as well as household expenditures, female respondents had differing opinions. While some cited satisfaction with how incomes are utilized, others expressed a desire to see a change in household expenditure and recognition of their input as women into the productive work. *“...i would like to see men involving us more in how income is used...I told my husband that there is no way we can farm together then after selling the produce you retain all the money...I also have needs as a woman...female respondent, Magumu FGD”*. This is the voice of a woman expressing her awareness that she has been part of the production processes and there should be a fair share of the accrued benefits of her labor. Sarah Longwe refers to this as conscientisation where there is an increase in awareness of gender issues among the women in this study area. Writing on Betty Friedan, Spender (1985) says that Betty paved the way for women to move from silence

to expression giving a voice to women's experiences. The expression above is that of a woman who has refused to fake satisfaction with her current status of contentment and express her displeasure. Such voices communicate a shift in the unequal power relations between men and women.

They reported situations when men have withdrawn their contribution to household budgets when they (women) made money either through loans advanced or sale of crops such as garden peas which is mostly viewed as a woman's crop. This withdrawal of contributions and diversion of finances by men increases the financial burden of women who as they reported they cannot abandon their families "*...are you now going to abandon your role as a mother because he is not supporting you?...you can't...boma ni mwanamke (a family belongs to the woman)...female respondent, Gathara FGD.*" Women are therefore left to shoulder the burden of preserving their families. This trend was also reported by Jeckoniah et al (2012) where men diverted their finances once women's incomes improved. However, it was also evident that women in this study area have established a coping mechanism to cushion themselves from these financial burdens. These include hiding away part of the proceeds from the sale of crops such as garden peas which is saved in VSLAs. This as they reported is utilized during times of scarcity. Male respondents reported being aware that sometimes their wives inflate house budgets with the aim of making some savings.

Though decisions in the study area are biased in favor of men, oral interviews and focus group discussions revealed a trend that is slowly changing whereby women are now giving input in decision making around use of income.

"...all decisions were made by men but these days you find that women also give their input...although not so many...Female OT, Magumu). ...decisions since the olden days are made by men.. let us not beat around the bush.. but these days, when we sell potatoes we are involving women and listening to their opinions...male respondent, Githabai FGD)...we have now learnt that if you want peace at home, involve her in decision making and use of income...you will even be able to find solutions together because you involve her...male respondent, Magumu FGD."

This shows that efforts to demystify some of the societal norms through modules such as Social Action and Analysis which challenges the social norms could indeed bear fruit. These findings indicate that women in this study area could slowly be reaching levels of control over benefits accrued from sale of their produce through conscientisation and so speaks to Longwe's framework. (Longwe, 1994). Empowering women is therefore essential for the overall economic productivity and therefore reduce poverty.

4.5.3 Time Allocation

This domain measures allocation of time to productive and domestic tasks and satisfaction with the time available for leisure activities. It therefore focuses on workload and leisure (Alkire et al, 2012). He opines that time burden disempowers women the most compared the other domains. In this study, discussions around time allocation aimed at establishing effects of workload on women and their participation in potato farming. In addition, the study sought to establish whether women were satisfied with the available time for leisure. Factors that shape workload such as cultural practices and societal norms were explored.

Findings indicate that women in Kinangop have a heavier workload compared to men placing women at a disadvantageous position. This is because they are heavily involved in farm activities in addition to domestic chores. Division of labor is highly gendered and places a heavy unpaid time burden on women. According to Abate (2017), this division of labor results from socially constructed norms and expectations. From the voices of female respondents, the heavy work load impacts on ability to attend agricultural trainings. Some spoke of domestic chores that so much occupy them leading to time lapses when it comes to pesticide spraying which is usually done in the morning.

“...sometimes you have so much house work such that you find that by the time you are done it is late to go to the shamba..and you see when you are spraying,we have been taught that you should do it early morning...and when you miss spraying your crop on time they get affected by diseases...female respondent Njabini FGD ...sometimes we also miss out on picking out pests that attack our crops since this is better done in the morning...all this because of the house chores....female respondent, Njabini FGD.”

These voices point to a situation where women are left with no choice but to make tradeoffs between house chores and farm work. This has an eventual effect on the household's food security should they chose house chores over farm work. Limitation of time for women in this study area means that they may not expand their capabilities to pursue other goals that would be valuable to them. Literature suggests that other than a lack of time to expand their capabilities, this expansion may be curtailed by norms that demand women's focus be on reproductive work which is prioritized over the expansion of economic activities (Walker et al, 2014).

Notably, the question of workload sharing was met with resistance from the older male respondents once it became clear through the discussions that men's contribution to domestic work was minimal. Male respondents were of the opinion that providing light labor saving technologies such as piped water, gas cookers would ease women's workload. "...I have ensured that I have piped water for her domestic use...I have also bought her a meko (gas cooker)...isn't that easing her work...even if she wants, I can employ for her a housemaid...male respondent Magumu FGD." It was evident that the motivating factor is not to ease women's work since but to exonerate themselves from any request to assist. While it is true that labor saving technologies reduces women's domestic workload, enabling women get to the level of equal participation in the decision making processes is more important for achieving women empowerment (Longwe, 1994).

While female respondents make admission of the heavy work load, opinion was divided on workload sharing. They opted for receiving assistance on farm related activities such as milking, feeding cows rather than on domestic chores. As Alkire et al. (2012) notes, an individual is adequate on autonomy if their actions are motivated by their values than by fear of other's disapproval. This is true of women in this study area. Women fear the backlash of their fellow women if their husbands are seen to be helping them. They will therefore do what they do so that others don't think poorly of them. The role of culture can equally not be ignored.

“.....let me say that if a man starts washing utensils....mhh.. that is not good...how will people perceive him...what will the neighbors think of me...let me just say I would not even want my husband to be doing such chores...that is not our culture...let him help me with the milking and taking the sheep to graze...I will do the rest...female respondent, Nyakio FGD. Mmhh.. you see the problem is your neighbors who might spread rumors around the village that your husband does house chores...this portrays a picture of a man who is under a woman’s authority...I would rather he helps me with feeding the cows...female respondent, Gathara FGD”

Though it was evident that heavy work load leaves women tried to fully engage in productive activities, cultural attitudes and beliefs passed on through socialization have made it difficult for women to receive help. Women therefore have to shoulder the work burden putting into question their effectiveness and productivity in crop production. The challenge of heavy workload is further aggravated by an increasing number of men moving to the urban areas in search of jobs while others have taken on casual employment to supplement the family’s incomes. This therefore means that women who are often left behind have to take on more farm related work without having their domestic chores reduced. All this is attributed to poor returns from the sale of potatoes pushing families to devising other means of earning incomes.

Respondents were asked to state whether women felt they had enough time for leisure. To ask this question, the interviewer had to use figurative words such as “relax” or “rest” since the Kikuyu language does not have a single word connoting leisure. Female respondents were in shock that they can abandon their chores for leisure. *“...how do you abandon your work to go have fun?...where do you even get the time to do so? ...we also do not have the money to spend on fun activities....female respondent, Gathara FGD.”* The interviewer had to explain to the participants that leisure does not necessarily mean spending money. This misconception is created by the fact that one has to use several words to interpret the word leisure.

Nevertheless, women in this study area mentioned that they rest only at night and on Sundays. Women with young babies had this to say. “...*some of us with small babies never get time to rest...we still have to nurse our babies at night...so by morning you are very fatigued since you did not sleep enough...and you have to do your house chores...you see like now I came with my baby since I didn't have someone to babysit for me...young mother, Nyakio FGD.*” They intimated that fatigue does affect their productivity at the farm level. Female headed households are more affected particularly if one is unwell. This impacts heavily on their involvement in potato farming since they have to make tradeoffs and so eventually affecting their food and nutrition security. Contrary, it was reported that men often engage in leisure activities after work. “...*if you look at this shopping center in the evening, you will find a lot of men relaxing...they usually say they are catching up with their friends...they also want to watch the evening news...remember you as a woman you have been left to milk the cows, put sheep in their pens, cook supper, supervise homework...female respondent Magumu FGD.*” The fact that men have the time to interact with the outside world either through interactions with fellow men or catching up with the current affairs means men have more opportunities to access information compared to women. Access to information is crucial for increasing agricultural production and improving marketing and distribution strategies (Rehman, 2013; Citing Oladele, 2006).

In conclusion, though decisions around production and use of income have largely been the preserve of men in Kinangop, the reported increase in the numbers of women getting involved and challenging these unequal power relations is a good indication that sensitization and awareness targeted at an entire household can lead to women empowerment. However, the question of work load sharing should be explored further by way of challenging the social norms around men carrying out domestic chores in order to ease the work burden of women and so free them to engage in productive activities that could give them extra incomes.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study analyzed men's and women's participation in potato value chain in Kinangop Sub County, Nyandarua County, Kenya. The study assessed the gender issues along the value chain and so undertook to establish the roles and responsibilities of men and women in the value chain and challenges that hinder growth for both men and women. Finally, the study examined the social cultural factors that influence women's participation in potato farming.

5.2 Summary

Men and women in Kinangop are heavily involved in potato farming and take part in all the three nodes namely production, harvesting and marketing. The degree of involvement varies from one gender to another. Women dominate the production stage carrying out activities such as sowing, weeding, manure transportation and application and fertilizer application. These activities involve bending and are repetitive in nature. They are also involved in harvesting where they dig out potatoes. It is notable that women display traditional knowledge in activities such as sowing, weeding, harvesting and processing of potatoes. Men on the other hand dominate activities around land preparation, transportation, spraying and bagging. These are activities that use light technology which they control. They also control the marketing node by finding buyers and negotiating prices. This eventually leads to control of incomes stemming from sale of the produce.

This study established various challenges that hinder the growth of men and women along this value chain. While some challenges cut across gender, it was noted that women bear the brunt of some challenges compared to men and so impacting on their productivity. Women face the challenge of accessing credit and capital due to lack of collateral and high interest rates. They therefore opt to borrow more from the informal lending institutions such as the *chamas* though these do not accord them enough to purchase inputs and afford other services needed to boost their crop's productivity. The study established that women do not necessarily borrow for agricultural purposes but

rather to meet other house hold expenses. The findings also show that workload and failure to access information are reasons why women sometimes fail to attend agricultural trainings.

On land as a productive resource, a majority of women in this region do not own land jointly. They have nevertheless, reported having access to this crucial resource. Only a few reported restrictions. Cultural norms towards joint ownership of land are rife in this region. Notably is that women are aware of law provisions around land inheritance from their fathers and while some have been beneficiaries, some women have opted to forego this right due to small land sizes and to avoid running into conflicts with their male relatives.

The study finally sought to examine the social cultural factors that influence the participation of women in this value chain. It was noted that decisions around production are still largely the preserve of men revealing a hierarchical manner in which decisions are made and implemented. However, there is a notable improvement with some women reaching levels of conscientisation and participation in these processes. This is laudable as it shows that interventions targeted at both men and women can bear fruit. The study also sought to establish how incomes are controlled and whether women make an input into decisions around use of income. A majority of men still control incomes accrued from sale of potatoes, though some women reported being involved in decision making. Women are now challenging social cultural norms around use of income demanding an equal place with men as the levels of awareness increase.

On time allocation, the study established that women in Kinangop have a heavier workload compared to men. This leaves women with no time for leisure. This heavy workload arising from house chores and increased involvement in farming activities places a heavy unpaid time burden on women. This is further aggravated by an increasing number of men moving out of homes to eke a living as the returns from potato farming dwindle. Workload sharing was met with resistance from men who opted for provision of labor saving technologies.

5.3 Conclusion

This study illustrates the various ways in which men and women participate along the potato value chain. Findings indicate that men and women take part in specific activities along the value chain pointing to a gendered division of labor. As a result, this leads to overburdening of women who in turn have little control over incomes. This calls for a re-evaluation and re-distribution of the roles to lessen the work burden of women and ensure equitable control over income use. Enabling women take an equal place with men and take control over factors of production on an equal basis with men leads to women empowerment.

The study findings led to the conclusion that men and women encounter various challenges along the potato value chain. These affect them in different measures with access to credit, access to and control over land and access to agricultural training impacting women more than men. This has led to women not optimally maximizing their potential in the value chain while some have adopted coping mechanisms to address these challenges.

Social cultural factors inhibit women to a greater extent than men in their involvement in potato farming. Culture plays a greater role in defining how decisions are made, use of income and time use. These greatly inhibit women's involvement in potato value chain. Addressing these cultural norms could mean raising women's levels of awareness in order to demand inclusion in to processes of decision making.

5.4 Recommendations

To ensure equal participation of men and women in the potato value chain and therefore draw equal benefits, the study makes the following recommendations:

- There is a need to mechanize farm activities dominated by women such as sowing, weeding and harvesting and so ease their work burden. County governments in rich agricultural areas could invest in a pool of labor saving technologies such as tractors and lend them out to their farmers at affordable rates. The County government should partner with farmers to grow certified seeds and supply them to farmers at affordable rates.

- Through the help of the County government, the current farmer groups in Kinangop should be assisted to form an umbrella marketing association which plays an important role to enhance the bargaining power of their members
- Easing of work labor burden for women through provision of labor saving technologies and workload sharing will free women to attend agricultural trainings. Information about these trainings should be relayed in places frequented by women such as places of worship and at their group meetings. This will ensure information has reached a majority of them who may not visit shopping centers and administrative offices where these announcements are made.
- Women groups should be assisted with light machines that are easy to operate such as those for processing potatoes into chips, crisps and starch. Value addition is one way of ensuring women reap more from their labor in the value chain.
- Partnership of the County government and private investors would see to it that farmers access storage facilities and so store up their produce until prices stabilize. Farmers could also be financed through their associations to establish village storage facilities.
- Women in this study area are reaching levels of conscientisation and so there is a need to continue raising their levels of awareness to help them gain a fair control over productive resources which will ensure equitability of gender and overall economic productivity.

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APPENDICES
APPENDIX I: INTRODUCTION LETTER



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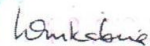
Ref: UON/CHSS/AWSC/8/6

To: Sub- County Commissioner
Kinangop Sub- County

SUBJECT: INTRODUCTION LETTER FOR MS. RUTH WAMUYU GACII

This is to confirm that **Ms. Ruth Wamuyu Gacii (M10/10054/2018)** is a registered Master of Arts student at the African Women Studies Centre, University of Nairobi. She is currently working on her research proposal entitled, "**A Critical Analysis of Men's and Women's Participation in the Potato Value Chain: A Case Study of Kinangop Sub-County, Nyandarua County**". She will be collecting data from **August 12th to 25th, 2019** in Kinangop Sub- County.

Any assistance accorded to her will be highly appreciated



Prof. Wanjiku Mukabi Kabira
Director, African Women Studies Centre
University of Nairobi

APPENDIX II: FOCUS GROUP DISCUSSION GUIDE

Thank you for agreeing to take part in this study.

SECTION I: Roles and Responsibilities

1. What are the roles and responsibilities of men in these different stages?
a) Production b) Harvesting c) Marketing
(Moderator to explain the different activities under each stage and also probe why they do so in each stage)
2. What are the roles and responsibilities of women in these stages?
a) Production b) Harvesting c) Marketing

SECTION II: Challenges

3. What would you say are the challenges faced by men in these stages?
Production- probe for access to and control over productive assets such as land, machinery and farm tools, credit facilities and capital, skills and training, extension services, farmer groups

Harvesting- probe for labor, storage facilities, labor saving technologies

Marketing- probe for access to markets, negotiation skills, access to market information, marketing groups
4. Now, let us list the challenges faced by women.
Production- probe for access to and control over resources such as land, credit facilities, capital, extension services access to and control over productive assets, work load
Harvesting- probe for availability of labor, storage facilities,
Marketing- probe for access to markets, negotiation skills, access to market information

SECTION III: Social Cultural Factors

5. What are the social cultural factors affecting women's participation in farming?
Probe how decisions around production are made, control over use of income, time allocation.
6. We have spoken concerning social cultural factors, how do they affect their involvement in potato farming?

APPENDIX III: ORAL TESTIMONIES GUIDE

1. Name _____
2. Age (yrs) _____
3. Sex _____
4. Marital status _____
5. Education _____
6. Farming Experience (yrs) _____
7. Ward _____
8. Nature of farmer group _____

SECTION I. ROLES AND RESPONSIBILITIES

Let's talk about your experience in growing potatoes in this area.

1. As a young girl/boy, what roles and responsibilities did you play in potato farming?
(Probe in relation to production, harvesting and marketing stages)
2. Have you continued doing the same role as a grown up? Please explain the changes.
(Probe along the three stages)
3. What changes would you like to see in the roles and responsibilities for girls, boys, men and women? *(Probe along the three stages)*

SECTION II: CHALLENGES

4. What challenges did (a) men and (b) women face in the following stages?
Production- Probe in relation to access to credit and capital, access to and control over productive assets, skills, extension services
Harvesting- availability of labor, storage facilities
Marketing-.access to markets, negotiation skills
5. How did these challenges affect (a) men and (b) women in relation to potato farming?
Probe along the three stages
6. In your opinion, are men and women facing the same challenges today?
Probe along the three stages

SECTION III: SOCIAL CULTURAL FACTORS

7. Were there social cultural factors that affected women in potato farming?

Probe how decisions around production are made, control over use of income, time allocation.

8. How did these affect their participation in potato value chain? *Probe along production, harvesting and marketing stages*

9. Do you think that the mentioned social cultural factors influence women's participation today? *Probe how*

APPENDIX IV: KEY INFORMANT INTERVIEW GUIDE

SECTION A: ROLES AND RESPONSIBILITIES

1. From your observation, what have been the roles and responsibilities of (a) men and (b) women in potato farming at (a) Production stage (b) Harvesting stage (c) Marketing stage
2. Having worked with these farmers, have there been notable changes over time in the roles and responsibilities of both men and women? Please explain. *Probe along the three stages*

SECTION B: CHALLENGES

3. What challenges do (a) men and (b) women experience as potato farmers? *Probe in relation to availability of capital, access to and control over productive assets, extension services, skills and training, labor, storage facilities, access to markets,*
4. How do these challenges impact (a) men's and (b) women's involvement in the value chain?
5. What kind of interventions have you put in place as a ministry to address the above mentioned challenges? *Probe in relation to access to agricultural trainings and extension services, farmer groups, marketing groups, labor saving technologies, provision of storage facilities, skills on value addition, financing*
6. Do you feel your interventions have had an impact into men's and women's involvement in potato farming? Please explain
7. What other interventions would you propose?

SECTION C: SOCIAL CULTURAL FACTORS

8. What would you say are some of the social cultural factors in this area that affect women's involvement in potato farming? *Probe in decisions around production, control over use of income and time allocation*

APPENDIX V: SEMI STRUCTURED INTERVIEW GUIDE

Social demographics data

1. Name _____
2. Age _____
3. Sex
 Male [] Female []
4. Marital status
 Married [] Widowed [] Single [] Divorced [] Separated []
5. Occupation of Spouse
 Works at farm [] Employed [] Business person []
 Others _____
6. Education level _____
7. Farming Experience (yrs) _____
8. Ward _____
9. Nature of farmer group _____

SECTION I: ROLES AND RESPONSIBILITIES

1. I would like us to go through this list and identify who mostly carries out the following activities in your household?
 Please tick the most appropriate.

Code	Activity	Male	Female	How is the activity done (<i>Tick mechanized or manual where applicable</i>)
1	Land plowing			
2	Digging furrows			
3	Manure transportation			
4	Manure application			
5	Fertiliser application			
6	Sowing			
7	Weeding			
8	Pesticide spraying			
9	Harvesting			
10	Bagging			
11	Transportation of produce from shamba to home			
12	Transportation of produce from shamba to market			
13	Preparation of storage			

	facility			
14	Looking for buyers			
15	Negotiating for prices			

2. a. Why are the activities mentioned in (1) above specific to the male in your household?

i. _____

ii. _____

iii. _____

b. Why are the activities mentioned in (1) above specific to the female in your household?

i. _____

ii. _____

iii. _____

SECTION II: CHALLENGES

3. a. In this area, what challenges do men face in potato farming in the following?

Please tick that which applies in each stage

Code	Challenge	Production stage	Harvesting stage	Marketing stage
1	Access to land			
2	Farm machineries such as tractors			
3	Credit facilities			
4	Capital			
5	Agricultural training			
6	Extension services			
7	Availability of labor			
8	Storage facilities			
9	Access to market			
10	Others (specify)			

	i)			
	ii)			
	iii)			

b. What would you say are the challenges faced by women in potato farming in the following?

Please tick that which applies in each stage

Code	Challenge	Production stage	Harvesting stage	Marketing stage
1	Access to land			
2	Farm machineries such as tractors			
3	Credit facilities			
4	Capital			
5	Agricultural training			
6	Extension services			
7	Availability of labor			
8	Storage facilities			
9	Access to market			
10	Others (specify) i) ii) iii)			

4. In your opinion, how do these challenges affect men's involvement in potato farming?

a) _____

b) _____

- c) _____
- 5. And how do these challenges affect women's involvement in potato farming?
 - a) _____
 - b) _____
 - c) _____
- 6. What changes would you propose to address the challenges faced by men and women?
 - a) _____
 - b) _____
 - c) _____

SECTION III: SOCIAL CULTURAL FACTORS

- 7. Please list the social cultural factors in this area that influence the involvement of women in potato farming in regards to the following. Please explain
 - i. Decision making around production _____
 - ii. Use of income _____
 - iii. Work load _____
- 8. How can we as a society address these social cultural issues so that women can better participate in potato farming with more gains?
 - i. Women
 - a) _____
 - b) _____
 - c) _____

APPENDIX VI: FIELD OBSERVATION

To observe:

Women only groups:

- Marital status of women hosting the demo plots
- Experience (married women) in identifying the demo plots

Mixed groups:

- Are there married women hosting the demo plots and what was their experience

Checklist of activities along the potato value chain

Activity	Who did it/Is doing it		Remarks
	Men	Women	
Setting up the demo plots (taking measurements)			
Land plowing			
Laying of furrows			
Manure application			
Fertilizer application			
Actual planting			
Covering of seeds with soil			
Record keeping			

APPENDIX VII: CONSENT FORM/SEMI STRUCTURED INTERVIEWS

My name is Ruth Wamuyu, a Master’s student from the department of African Women Studies Center,(AWSC) University of Nairobi. AWSC in partnership with CARE Kenya is carrying out a research study on Evaluating Impacts of Gender in Agriculture and Food Security and Nutrition Outcomes in Kinangop Sub County. This research study forms part of this project.

I am here today to learn from you as you share your knowledge and experiences in men’s and women’s participation in potato value chain. Your participation to this study will be voluntary. Your answers will be helpful to the country, county and community in formulating effective policies and strategies that will help in improving potato production.

I would like to assure you of confidentiality and privacy. Your name shall not be used in the writing of the report. Should you feel uncomfortable to answer any question, you may choose to remain quiet.

If you are in agreement, kindly indicate your demographics and sign.

Name: _____

Gender: _____

Marital status: _____

Education level _____

Farming experience (yrs) _____

Ward _____

Nature of farmer group _____

Sign _____

APPENDIX VIII: CONSENT FORM FGD AND ORAL TESTIMONY

My name is Ruth Wamuyu, a Master’s student from the department of African Women Studies Center, (AWSC) University of Nairobi. AWSC in partnership with CARE Kenya is carrying out a research study on Evaluating Impacts of Gender in Agriculture and Food Security and Nutrition Outcomes in Kinangop Sub County. This research study forms part of this project.

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With your permission we shall be recording this conversation for purposes of being able to capture all the important information. However, I would like to assure you of confidentiality and privacy. Once we have finished the study, the information recorded shall be erased. Your name shall also not be used in the writing of the report. Should you feel uncomfortable to answer any question, you may choose to remain quiet.

If you are in agreement, kindly indicate your demographics and sign.

Name: _____

Sex: _____

Age _____

Marital status: _____

Education level _____

Farming experience (yrs) _____

Ward _____

Nature of farmer group _____

Sign _____