

**CHALLENGES FACING RURAL WOMEN IN AGRICULTURAL
PRODUCTION IN KANTHUNI LOCATION OF MAKUENI COUNTY,
EASTERN KENYA**

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DECLARATION

This project paper is my original work and has not been submitted for a degree in any other University

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DEDICATION

To my late sister Regina and my family (Germano, Charity and Timothy) for your support and encouragement.

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ABSTRACT

This study sought to investigate the challenges women farmers face in rural agricultural production in Kanthuni Location of Makueni County, Eastern Kenya. Using a qualitative approach, the study investigated women's roles, the challenges they face and how these can be mitigated. Semi-structured and key informant interviews were used to collect the data. Drawing from the subjective experiences of the women farmers, the study findings show that women farmers play both on-farm (cultivation, weeding, harvesting, pest control) and off-farm roles (storage, treatment, marketing). In these roles, however, women face structural (transport and marketing), social (gender inequalities and discrimination) and economic (agricultural funding) challenges. These challenges can be addressed through gender mainstreaming and deliberate efforts to empower women rural farmers. Increasing women's access to credit facilities, training, and aligning land policies are some of the mitigation pathways. The study concludes that women play significant roles in agricultural production through rural and small-scale agriculture. However, the demonstrated impetus women have in rural agricultural production is riddled with various challenges that, in different combinations, limit their full participation. Although some of the challenges are common to all farmers, others have unique implications on women farmers. The challenges can be mitigated through gender inclusion and parity mechanisms. Rural agriculture policies, frameworks, and programmes need to target women farmers and include them in mainstream agricultural activities and support structures as incentives, extension and training services.

LIST OF ABBREVIATIONS AND ACRONYMS

FAO	-	Food and Agriculture Organization
SSA	-	Sub-Saharan Africa
NGO	-	Non-Governmental Organization
ASALs	-	Arid and Semi-Arid Lands

CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 Introduction

Agriculture remains fundamental for development and economic growth in Africa, where women play a major role in food production. In most developed countries, agricultural production is undertaken in large-scale activities, while in the developing countries, agricultural produce is grown, processed and marketed by rural, small-scale farmers (Opio, 2003). In Africa, agriculture still remains one of the main sources of exports and is the employer of the bulk of the population. Most of the African farms are small-scale and despite some urban cultivation, a majority of the farms are in rural areas and are managed mainly by women. A report by the Kenyan Ministry of Agriculture indicates that the sector employs 74% of Kenya's workforce and is the main source of livelihood for the rural population. Agriculture also remains the backbone of Kenya's economy because it contributes approximately 25% of the GDP (FAO, 2011).

Despite the barriers they face, women continue to play significant roles in ensuring food security and working against environmental degradation, hunger and poverty. They have accomplished this by being major actors in the agriculture sector since 75% of women in Kenya live in rural areas where they dominate the agriculture sector. In Kenya, and other sub-Saharan countries, women contribute as much as 60% to 80% of the labour for food production both for household consumption and for sale. Moreover, agriculture has become predominantly a sector for women because of the out-migration of men from rural areas. In fact, by the early 1990s, women were the major smallholder farmers providing most the labour and managing a large portion of many agricultural production activities daily (Saito *et al.*, 1994).

Therefore, women make essential contributions to the agricultural production and rural economies in Africa. In fact, women farmers produce about 80% of the food that is grown on the continent. However, the agricultural sector in Africa is under-performing

because women, who represent a crucial resource in the sector as farmers, labourers, and entrepreneurs, face severe constraints relative to men in accessing agricultural inputs (FAO, 2011).

Despite their great involvement in agricultural production from planting to harvesting and food storage, women generally can only use the land but cannot own it. They can make decisions on what to plant and harvest but they cannot sell land or make decisions about its allocation. Land is a major factor in farming, and is a source of wealth that is sustained across generations. It is also a source of social and economic status. Since women cannot own land or control the parcels they cultivate, they have little status in society and this affects their ability to access other factors of agricultural production such as credit as well as seed and farm implements (Alice, 2008).

Agriculture is changing from traditional methods of farming to the use of modern machines in order to achieve high yields and meet living standard needs. The use of technology can bring great improvement in this sector, but a major challenge for the women is that due to their low levels of education, they are not able to effectively use modern agricultural technologies (Republic of Kenya, 2013).

Education is important for sustainable production in agriculture, not just for individuals who work on farms but also for the society at large. As educated farmers, women are a major factor in achieving sustainable development and in ensuring food security for every nation. Educating women, therefore, is a good investment in agricultural production and in ensuring food security. A study done by the World Bank *et al.* (2009) shows that agricultural production and the wellbeing of household members is highly determined by the level of education, especially of the household heads, who in reality are women because they are the ones who in practice manage households.

In farming, there is a need for the use of extension services. The agricultural extension officers teach and train farmers on the best methods of farming and how to farm in order

to increase the production of some crops, especially food crops. However, most of the extension officers are men and due to cultural norms they are mostly in contact with men and expect men to teach their wives. The services of extension officers are very crucial for any rural agricultural development but women face barriers in accessing them (Okwu and Umoru, 2009). Conversely, agricultural information is important in improving farm production. In particular, access to information in the agricultural sector enables rural communities, especially farm women, to understand what they need as farm inputs and helps them to find markets for their products. However, due to their low social and economic status, women are disadvantaged in accessing agricultural information (Adomi *et al.*, 2003).

Land maintenance as well as preparation or conservation of its soil is crucial for sustainable production of food, which is vital for the wellbeing of families and nations. However, women manage the farms in Africa but lack resources and power to maintain agricultural land. Since women play a major role in food production, they should be included in any forum that decides on land use and land ownership policies and they should participate in decision-making processes that involve land use (Grace, 2005).

1.2 Problem statement

Women farmers are the main producers of food and other agricultural produce in Africa. However, due to their low social status, lack of farming skills, low education, and lack of decision-making power on land issues in families and in society, women are disadvantaged in agriculture. They can do more but the challenges they face do not let them realize their full potential. Even though they are the real farm managers, women work as casual labourers or as landless family members. They also lack control over the land they farm and have no decision-making power over the agricultural output they produce or the money they get from the sale of part of that produce. This situation is due to African customary laws and statutory regulations that oppress women by denying them property and land rights that makes it extremely hard for women to access credit and agricultural extension services. These constraints similarly make women lack incentives

and motivation to engage in land rehabilitation and soil quality as a result of environmental degradation. Therefore, rural agricultural development cannot be achieved without addressing women's disadvantaged positions in agriculture and in society at large (FAO, 2011).

In sub-Saharan Africa rural women are the main sources of farm labour. This starts with the preparation of farm land and continues to other farming activities such as weeding, harvesting, food storage, and to the selling of the surplus food and other agricultural products. Women are also responsible for raising small livestock, tending kitchen gardens as well as collecting fuel wood and water (FAO, 2003). However, women can only sell these agricultural products after they have stored enough for the family because they are the ones in charge of food security at the household level. After selling the farm produce, the money women get is controlled by men who head households because of the patriarchal system in Africa.

Recent studies, for example, a study done by African Womens Studies Centre (2015) focused on food security and was quantitative but it did not address specific rural areas. Therefore, the purpose of this study was to explore the challenges that rural women in Makueni County face in agricultural production and how these challenges can be addressed. In order to undertake an in-depth analysis of the issues involved, the study was conducted in a rural location of Kanthuni, Makueni County. The study was guided by the following questions.

1. What are the roles that women play in agricultural production in Kanthuni Location, Makueni County?
2. How do the women mitigate the challenges they face in rural agricultural production in the study area?

1.3 Objectives of the study

1.3.1 Overall objective

To explore the challenges facing rural women in agricultural production and how the challenges can be overcome in Kanthuni Location.

1.3.2 Specific objectives

1. To describe the roles that women play in rural agricultural production in Kanthuni Location in Makueni County.
2. To analyse how women mitigate the challenges they face in rural agricultural production in the study site.

1.4 Assumptions of the study

1. Women play many roles in agricultural production in Kanthuni Location.
2. Women face social and technical challenges in rural agricultural production in Kanthuni Location, Makueni County?

1.5 Significance of the study

This study has provided information on the role women play in rural agricultural production and the challenges they face. This information, if adopted by the county, will help the county and community-based organizations to come up with recommendations on how to address the challenges of women in agriculture and, thus, improve the state of women in the study area. The study findings may also enable the Makueni County Government to increase the number of women in decision-making forums at the division level. The findings of the study can be used in the implementation of agricultural policies and, thus, improve on food security and reduce poverty. Finally, the study has added to information that can be used by other scholars as well as stakeholders interested in rural development.

1.6 Scope and limitations of the study

This study was conducted in Kanthuni Division of Makueni County in Eastern Kenya. It focused on the roles women play in agricultural production. Women were the main actors and, therefore, the units of analysis from which information was collected. The study collected both qualitative and quantitative data. However, the study has not yielded quantitative trends on challenges faced by women in rural agriculture. This limitation was addressed by using the triangulation method. Since it was a case study of Kanthuni Location in Makueni County, the findings cannot be generalized to counties in different geographical regions of Kenya.

1.7 Definition of terms

Access to land:- To be able to own land through the procedure of being given a certificate of ownership by the Lands Ministry or through customary allocation of land. In the context of this study, the issue was whether women are able to use land freely without the ownership right.

Agriculture:- This is the practice of cultivating the soil, producing crops, and raising livestock and, in the study area, the preparation and marketing of the resulting products. It is an income activity for the people in most rural areas.

Agricultural production:- Vegetable and animal production that is made available for human consumption and animal feed. Crop production data include cereals, main crops (dried pulses and protein crops, root crops, industrial crops, plants harvested green), vegetables, melons and strawberries.

Agricultural extension officers:- Agricultural officers who communicate with farmers and support them to make appropriate farming decisions by providing them with information about sustainable farming practices. Information about biodiversity is increasingly important to help farmers farm sustainably and access new markets. Agricultural extension officers propagate new and more effective farming methods based on the latest research.

Agricultural development:- This refers to improving the quality of life and economic well-being of farmers, herders and agricultural workers. It focuses on the exploitation of land-intensive natural resources such as agriculture, livestock, forestry and fisheries. It also involves improving agricultural services, agricultural incentives and technologies, and the resources used in agriculture, such as land, irrigation, human capital and rural infrastructure.

Food security: This is when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food, which meets their dietary needs and food preferences for an active and healthy life.

Food insecurity: A situation that exists when all people do not have physical, social and/or economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. The absence of food security is a multifaceted problem exhibited by famines and food emergencies. More importantly, food insecurity has a temporal dimension such that it can be chronic or transitory.

Food production: An activity or process of producing, preparing, processing, making, preserving, packing or repackaging and/or changing the form of food.

Household:- A domestic unit consisting of members of a family who live together in the same dwelling unit along with non-relatives and feed from one pot, or share the same grain store or who pool their incomes for the purpose of purchasing food.

Household head: The most responsible member of the household who makes key decisions of the household on a day-to-day basis and whose authority is recognized by all members of the household. A household head could be a father, a mother, a child, or any other responsible member of the household depending on the status of the household.

Livestock: Any domestic animal produced or kept primarily for farm, ranch, or market purposes, including cattle, sheep and goats.

Manure: Generally, the refuse from stables and barnyards including both animal excreta and straw or other litter.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature on the role of women in rural agricultural production and the challenges facing them in their farm enterprises. The review is guided by specific study objectives. This includes the role of women in rural agricultural productions and the challenges faced by women. The chapter ends with a discussion of the theory that guided the study and its relevance to the study.

2.2 The role of women in agricultural production

According to FAO (2011) African rural women are the main players in agricultural production. Women's roles include the preparation of the land, getting the seeds, planting, weeding, harvesting, storing and selling. Most of the food produced is used at the household level for the family. Rural women are major contributors in the economic growth in developing countries like Kenya given that Kenya depends on agricultural products for export. In Kenya, women supply about 70% of the labour in the agricultural sector (FAO, 2015).

Due to urban migration, most women are left in the rural areas to take over the household leadership of the family. They have to ensure that the farm is well managed. In most cases women are involved in the planting of seeds. This is normally done in different seasons and to get high yields it has to be done well. In most rural areas farmers mostly use indigenous methods of farming and land preparation and prevention of soil erosion. One of the methods used to prepare land for planting is ploughing, which is often done manually and is strenuous to women. After planting women do the weeding to enable the crops grow. Once the weeding is done to avoid crops being destroyed by weeds and insects the crops are sprayed, mostly by women given that they are the majority in the

rural areas. Women are also involved in taking the surplus to the market for selling (Agesa and Sunwoong, 2001).

Animal keeping is done by rural women given that most of it is practised in the rural areas. The cattle and other livestock are used for household income and are also an important part of the national economy (Ayiecho, 1990).

2.2.1 Household food security

FAO (2009) states that food exists when all people at all times, have economic, physical and social access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Specifically, FAO (2009) adds that food security is dependent on four pillars, namely, availability (food supply security), access to available food (food consumption security), the appropriate use and physical conversion of available food (the conditions that allow for the conversion of food into an adequate nutritious status and stability of food availability, access and conversion overtime (cf. FAO *et al.*, 2014; FAO, 2015). This implies that when food is not available in sufficient qualities and quantities there is a state of food insecurity.

Some of the main causes of food insecurity in agricultural communities in developing countries include decline and fluctuations in food productivity and supply, instability and/or rising of food prices, decreases in household incomes, land fragmentations, large family sizes, male out-migration, rudimentary technology and adverse weather conditions (UNICEF, 1990). However, in Kenya the key causes of food insecurity in arid and semi-arid lands (ASALs), agro-pastoral and pastoral regions include sporadic outbreaks of livestock diseases, depletion of grazing resources, acute water shortages, droughts and resources-base conflicts (Republic of Kenya, 2011a.; USAID, 2015, 2010a, 2010b; FEWS NET, 2015).

According to Chinery (2011), throughout the world, women are the principal guarantors of nutrition, food safety and food quality at the household and community levels. They

are the ones who mainly produce, purchase, handle, prepare and serve food to families and community institutions. They produce between 60 and 80 per cent of the food in most developing countries and are responsible for half of the food production in the world (Chinery, 2011). In rural communities, women are often bestowed with the responsibility of providing food in the home. They farm small subsistence plots of land to provide food for their families. Women are also responsible for at least half of the tasks involved in the local storing of food and raising of animals in isolated rural communities. Apart from food production, women increase their contribution to household food security by earning income to purchase food. They also try to do both to fulfill basic family needs. For these reasons, women are the foundation of food security in the community and in households.

Fatma (2009) states that food security is not just having enough supply of food, which is nutritious but also involves its sustainability for the future generations. Emphasizing that women's effort and input in the agricultural food production is more than is acknowledged, she further states that in rural areas in sub-Saharan countries like Tanzania and Kenya women's produce does not yield much income because most of what is produced is usually used at the household level. Due to the desire to satisfy families with sufficient food, women have to work more hours on the farm without pay or recognition. Most Kenyan communities believe that women must provide food for household consumption. A study done by Suri *et al.* (2009) shows that in Kenya, household income is mainly from agricultural produce and only about a third is from either salaries or businesses.

2.2.2 Women as unpaid labourers

Agriculture is a major source of employment to men and women in sub-Saharan Africa but it mostly benefits women because they are the majority in the sector (Fatma, 2009). However, women work in agriculture essentially as unpaid labourers because what they produce belongs to men who control the land and have power to decide how agricultural production is to be used. Sub-Saharan African cultural factors and norms determine the

division of labour at the household level whereby in most cases decisions are normally made by men. The gender roles in the community are socially structured and different from one society to the other although generally women and children are regarded as workers at the household level. Due to this, in rural agricultural production women are normally involved in all the activities on the farm. A majority of the rural women are subsistence farmers especially in Kenya. The division of labour in agricultural production depends on rain seasons during which women are highly involved in farm activities (Multani and Sanghvi, 2017).

Rural agricultural production involves mixed farming. Livestock keeping is practised, and is a source of a balanced food supply because it enables the family to have eggs, milk, blood and meat. Rural women not only are the major livestock keepers but they account for about 70% of the poor livestock keepers. A study done by ILRI (2012) found that of the 600 million poor livestock keepers in the world, around two-thirds are women and most live in rural areas. Despite the women doing much of the labour in keeping the livestock, especially cows, their labour is unpaid. This is because it is assumed that it is one of their responsibilities (FAO, 2009; ILRI, 2012).

Cash crops are mostly managed by men because it is they who control resources. However, in cases where men are not present, mostly in rural agricultural production settings, women cannot afford to employ labour and so they carry out all the activities by themselves. Despite this hard work, after harvesting and selling of the products, women hand over all the income to the men as heads of families. This situation makes it difficult for women to maintain their health as often they lack the money for medical care and balanced food (Mwaura and Muku, 2007).

Rural women's labour at the household level also includes reproductive roles, which means that they have to work from early hours to late at night. In most households in rural areas, women still use firewood for cooking and there is no tap water. Therefore, women have to walk long distances to fetch water and get firewood that can take about

four to five hours to find (Suda, 1990). This makes them bear a double workload at the family level. In rural areas, husbands financially support women. They often have no money to employ casual labourers to help on the farm, especially during the weeding and harvesting seasons when the women must do the entire farm work. When women are not working on their farms they work as farm casual labourers. Indeed, most of the farm labourers are women (Nyangito and Ndirangu, 2002).

2.2.3 Women as land managers

Land is the main factor in food production in the rural areas. In all Kenyan cultures, when one talks of food, whether in production, processing or marketing, it is assumed to be a woman's responsibility. Therefore, women are directly in contact with land in their effort to produce, process, and store food. It is the responsibility of the women to make sure that the soil is good for crops. They fertilize the soil by using manure, usually cow dung or crop leftovers. In cases where the soil erosion is taking place they dig terraces to prevent it because, in most cases, men are away in urban areas or in market places. Women need the necessary skills and knowledge to understand how to manage the land well, conserve the environment and increase farm production (Grace, 2005). Generally, most rural women aim at proper use of the land but due to an increase in rural population and globalization of markets, proper land maintenance is a challenge to them. The clearing of forests and vegetation has led to flooding, drought, famine, disease and low yields. As the key land managers in rural areas, women need to be trained in the proper use of the land so that the land can accommodate other activities. There is a need for women to know how to handle the changing challenges of land use and how to respond to the scarcity of resources brought about by the increase in rural population and by reliance on markets for nearly everything, and yet they do not control household finances (Bonye and Kpieta, 2012).

Forests are mostly in rural areas, where women are the care takers. Women conserve the forests by planting more trees because this is the source of water. If the forests are destroyed, there will be no agricultural activities because of lack of rain. There is a need

to balance between keeping the trees and clearing them for agricultural production. This is a very important point for women to note because in the event of forests disappearing, it is the women who will suffer the most. Forests act as catchment areas for water and rivers, and clearing them for farm production today leads necessarily to food shortages in the future (Agarwal, 2001).

Women in rural areas are more linked to natural resource use and conservation than men. Their traditional gender roles bring them in daily contact with natural resources such as land, water, forest and wildlife. They have to use these resources because they are often poor and their livelihood mostly depends on these resources. When these resources are exploited and ruined, women suffer the most. If they are managed well and used sustainably, women benefit the most. Most women want to learn and to be recognized for what they really are: managers of natural resources, who also use the same resources to ensure that food is available for their families and the wider society (Lotsmart, 2008).

2.3 Challenges faced by women in agricultural production

2.3.1 Socio-cultural norms

Socio-cultural discrimination and stereotyping are still the main constraints in women's participation in the agricultural sector. In most African countries, women are rarely allocated land in their own right, particularly in patriarchal systems. Land is allocated to men, who are the heads of households. Even for women in matrilineal societies land is still commonly controlled by their husbands or male clan heads. There are taboos like food should not be transported by donkey, which women mostly use in rural areas for transportation (FAO, 2009). Therefore, women have to carry the produce on their backs or heads to sell in the market. In some societies in Kenya, cultural norms do not allow women to meet or work with male extension agents, which makes them unable to learn new farming technologies (Nuhu *et al.*, 2014).

2.3.2 Lack of access to land and water

Land and water are fundamental to agriculture, yet men and women experience different challenges in accessing them. Women have limited access, ownership or control over land compared to men due to cultural or legal practices in most African countries, including Kenya. This problem is spread world-wide. One study (Daley and Englert, 2010) shows that women hold title to two per cent of land globally and are frequently denied the right to inherit property. In most African countries, for example, Uganda, women rarely own any land at all. Even in instances where women have some legal rights to own land they are required to co-own it with a male relative (Daley and Englert, 2010). In many rural areas, where most of the agricultural activities take place land is allocated through customary law and traditional norms and women or girls are not supposed to own or inherit land. This shows that women have limited access to, and control over land, meaning they face challenges participating in agricultural activities (Bugri, 2008). Not only do women lack control over land, but also the earnings from the land and the decision of where each type of crop should be planted. Therefore, women have little income from the farm and they are not able to feed the families well as required. Similarly, women are sometimes forced to use marginal lands located far from settlements to grow food crops that are consumed and marketed locally as better land tends to be used by men for cash crops. This is a major obstacle to improving women's participation in agricultural production (Lotsmart, 2008).

One of the greatest factors working against women is the land tenure system. In many cultures, land is passed on to men and not women. Most rural land parcels are traditionally registered to men and women can do nothing in increasing fragmentation for sale or other activities. Even though they are the ones that deal with production on land, its fate is entirely a male issue. There are cases of subsistence food crops diminishing while major cash crops increase. Women are involved mostly in the provision of food, and when little and poor land is available for subsistence crops, they are forced to work harder or go long distances to reach scattered parcels of land to farm for domestic food crops. Therefore, land tenure systems and legal structures actually marginalize women

when, in fact, they are the most affected and real invisible land managers, for instance in Kenya. When the land increases in value most owners decide to sell or use it for projects other than farming. This means less farming land especially for women who are supposed to provide food. Since women have no control, many cannot raise any objections (Opio, 2003).

Women are generally responsible for providing water for both household and agricultural needs in addition to their full time farming duties. It is not only the African women and girls who spend many hours a day fetching water but also women in many parts of the world. In this regard lack of secure, dependable and easy access to water leads to limited irrigation and lower crop yields. However, more profoundly, it places major restrictions on women's productivity. The time burden imposed on women by insufficient access to water constrains their capacity to engage in agricultural activities and, thus, the market economy (Grace, 2005).

2.3.3 Lack of access to extension services and training

In most African countries, there has been an increase in information about the existing gender disparities in agricultural extension services but the issues have not been addressed. The result of this is that the people who are actually doing most of the farming are often not able to access vital extension training. In fact, only 15 per cent of the world's agricultural extension agents are women, and women receive only five per cent of all extension services globally (FAO, 2009). In Africa, rural women in particular have continued to have limited access to extension services especially in the curricular and training of extension workers. In Kenya, a majority of the extension service providers are men and this limits women's access to the services. In the rural areas where most agricultural participation is done by women, these services are limited since most of them are illiterate and, therefore, cannot participate. In this regard, it is worth noting that only a few women are employed as extension agricultural officers (Gautam, 2000).

The major reason why women have limited access to extension services is due to cultural and religious beliefs that restrict interaction between men and women, thus making it difficult for women to attend training with men. The triple roles (productive, reproductive and community) also hinder women, especially in the rural areas, from sparing time to attend the extension services. Given that most of the extension officers are men, they are not able to address women's special needs in agriculture, for example, the best food crops to plant that have high nutrient values, energy-saving farm implements, the methods for storing food to avoid wastage or the best cropping patterns, especially for staples. Lack of access to agricultural extension officers is a major challenge to the agents and the government in the promotion of gender mainstreaming in agriculture. Due to African cultures and the low level of education by women, most extension officers will speak to men in the expectation that men will in turn extend the information to women but this rarely happens. This practice is a major challenge because women end up not getting the proper skills and training about agricultural production (Enarso and Meyreles, 2004).

2.3.4 Lack of access to inputs and credit

In sub-Saharan Africa women have limited access to credit in the agricultural sector. Most of the agricultural inputs are purchased by men. Even when tools which are better suited for women, such as light weight, long handled hoes, are available, women do not have the money to purchase them. Thus, they continue to slowly and painfully weed by hand, using short-handled hoes, which decreases their speed and productivity. Men are mostly in control of money and are the ones who decide the farm tools to buy for women (Adekola *et al.*, 2013). Lack of use of modern machines leads to low farm production. While many microfinance programmes are directed towards women, mainly due to their high rates of repayment, several factors continue to create barriers for women in accessing credit, particularly at the small and medium sized enterprise level. Due to unpredictable seasonal nature of farming, the repayment of agricultural loans becomes a challenge. The transaction costs for credit in most rural areas, where women are more likely than men to be engaged in agriculture, make the accessibility of credit more

difficult. Lack of ownership of land is a challenge because most credit facilities require collateral documents, like title deeds (Adekola *et al.*, 2012).

2.3.5 Lack of access to education and technology

Most women in Africa are illiterate and, therefore, they have limited access to training opportunities and access to information useful on how to participate in the agricultural sector effectively. In most cases, it is assumed that training and information provided to men will be transferred to women farmers at the household level. Conversely, due to lack of education, many women farmers are unable to read and understand instructions on fertilizers or seed packages, directions on how to use tools or technologies, or even read a weather report which, in turn, lowers yields. Although technologies exist to improve productivity, most are adopted in relation to tasks more commonly specifically suited for women's farming. In fact, many agricultural tools used by everyone are not created with women's body frames in mind or with the understanding of how women and men perform similar tasks differently. Most of the modern tools for farming are not gender sensitive (Adomi *et al.*, 2003).

2.3.6 Lack of decision-making power and exclusion from policy formulation

In Africa most of those who are in leadership positions, including politics, are men. In the agricultural sector, the top management is dominated by men and, therefore, most of the policies and decisions made are not gender sensitive. Lack of decision-making even at the family level is a major challenge for women's participation in the agricultural sector. This, coupled with their long-term low socio-economic status, renders them generally unable to make any key decisions or policies in the agricultural sector. Therefore, women in Africa have inequitable decision-making privileges and in most cases, their specific needs are not addressed. In this case there is no attention paid to the roles and responsibilities women play when formulating agricultural and rural development plans and policies (Adekola *et al.*, 2013).

2.3.7 Lack of access to markets

Agriculture is not only used to feed families but it is also as a source of income generation for the family. Farmers should be able to sell their agricultural products locally, nationally, regionally and internationally. For the products to reach markets, they have to be transported and, therefore, there is a need for good roads. In most parts of African rural areas the roads are, in most cases, impassable during rain seasons. Most of the farmers live far from the market places and this is a challenge for the women farmers because of the other activities that they have to undertake. Most of the women have no access to information about prices because many only have elementary education and a large number are illiterate. The mode of transportation is also a challenge to the women because they lack money to pay for the available means of transport. Many prefer to use donkeys, which take a long time to reach the market. Women cannot afford stalls to store their products because they do not control resources (Nuhu *et al.*, 2014) and, thus, they can only carry very little to markets.

2.4 Theoretical framework

2.4.1 The social relations approach

This study was guided by the social relations approach pioneered by Kabeer (1994). According to Kabeer (1994), the social relations approach is a framework that shows how gender and other inequalities are created and structured within the family, society and a nation. The theory states that it is institutions (humanly constructed social systems) that initiate and maintain social inequalities in society. The key institutions are customs, state, market, community, social networks and the family. They come up with policies that dictate what to be done and who will do it. The theory also explains the gender roles and decision-making in most institutions. At the family and community levels most of the decisions are made and controlled by men. Therefore, the theory can be used to explain the inequalities and disadvantages that women face in the agricultural sector.

The theory emphasizes on the institutions that are the main cause of the many challenges that women face in society. It states that the institutions may be formal or informal, but

whatever their nature, they have an effect. The theory helps in showing very well what every party would do. In the decision-making arena, the theory emphasizes on who makes most of the decisions in the society or family and how the wider population views the decisions and decision makers.

2.4.2 Relevance of the theory to the study

This theory was applicable to the study because it shows why women have challenges in agricultural production and how the challenges are socially structured. The theory helped to explain the causes of the gender inequalities in the agricultural sector and why women are faced with many challenges and yet they are the main players in agriculture. The theory explains why those who produce the most and supply the most labour to the farm sector are the ones with the least power to use what is produced. According to the theory, the cause of the challenges faced by women are due to specific institutions, that is, the family, the local community, the society and the state. These institutions set rules, responsibilities, policies and establish markets. Together, the rules and the responsibilities arising thereof, the policies of the state, and the markets (where what is produced or owned is exchanged) determine what women can do, earn, and can achieve. The institution of patriarchy, for example, explains why women work the hardest and receive little or nothing, contrary to economics theories that assume that hard work is always rewarded.

The conceptual framework (Figure 2.1) below was developed from the literature review above. In this conceptual framework, the independent variables are the contribution of women towards agricultural production and their socio-economic challenges that impede women from high yields and the dependent variable is women agricultural production.

Independent variables

Women Roles in Agriculture

- Household food security
- Labour supply
- Land Management

Challenges

- Lack of decision-making power
- Lack of credit facilities
- Lack of control over land
- Lack of access to extension services and training

Dependent Variable

Women agricultural production



Figure 2.1: **Conceptual framework**

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter describes the research techniques used in the study. It describes the research site, research design, study population, sample population and sampling procedure, data collection methods, as well as data processing and analysis. The chapter ends with a discussion of the ethical issues that guided the study.

3.2 Research site

This research was carried out in Kanthuni location in Kathonzwani Sub-County in Makueni County (Fig 3.1). In 2009 Kathonzwani Sub-County had a population of 224,074 people, comprising 41,878 households. The Sub-County covers 2648.3 square kilometres (Kenya National Bureau of Statistics, 2009), and has nine (9) locations, which are further divided into 17 sub-locations. Kathuni is one of the locations and has three sub-locations: Yekanga, Kanthuni and Ivikanzia. The location borders Athi River to the east, Thavu sub-location on the west, Kanzokea location in the south and Kanyangi to the north. Farmers in Kanthuni location practise mixed farming. Most of the farmers keep livestock in the form of cattle, goats, sheep and chicken. Due to the shortage of rain, most of the crops planted are those that require short rains like Katumani breed of maize, pigeon peas, cowpeas, green grams, and sweet potatoes. Because of unreliable rainfall, the site is classified as a semi-arid zone. During the long dry periods people rely on government relief food and handouts from non-governmental organizations and well-wishers (KNBS, 2009).

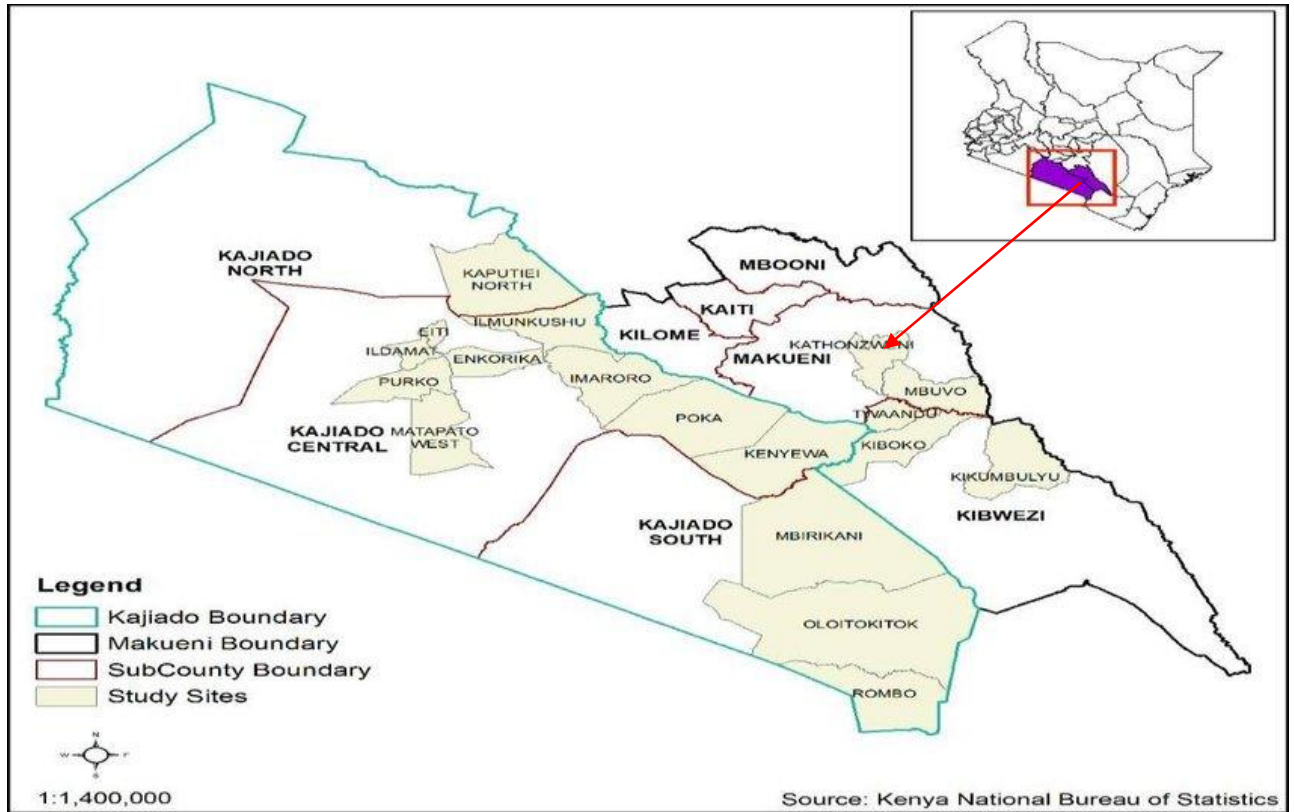


Figure 3.1: Map of Research Site

Source: KNBS, 2009

3.3 Research design

This study used a descriptive design in which both qualitative and quantitative approaches were employed. A descriptive study is undertaken in order to determine and be able to describe the characteristics of the variables of interest in a situation (Sekara, 2006). Data were collected using semi-structured interviews and key informant interviews. Qualitative data were analysed using content analysis under various themes while quantitative data were analysed using the excel spread sheet.

3.4 Study population and unit of analysis

The target population consisted of all rural women farmers in Kanthuni Location. The unit of analysis was the individual woman farmer in Kanthuni Location.

3.5 Sample size and sampling procedure

The sample population consisted of 30 women. Stratified sampling was used in selecting three sub-locations in Kanthuni Location while simple random sampling method was used to select ten (10) respondents from each sub-location. Women in the households were selected through the simple random method. Starting from the town centre the nearest household in any direction a woman involved in mixed farming was interviewed until the required number of interviewees in each sub-location was reached.

3.6 Data collection methods

3.6.1 Semi-structured interviews

This method gives the researcher direct interaction with the respondents. The respondents were required to answer an identical set of questions using a semi-structured questionnaire (Appendix 1). The questions enabled the researcher to collect general information including demographic characteristics and on thematic areas.

3.6.2 Key informant interviews

The key informants in this study consisted of the Sub-County Director of Agriculture and a representative from an NGO in charge of training and helping farmers in the location. The study used a key informant interview guide (Appendix II) to collect the data.

3.6.3 Secondary sources

Secondary data were collected from relevant published books, periodicals, theses and project papers, official reports, journal articles, the Internet, newspapers and government documents. These sources were used in the preparation of the proposal and they continued to be used throughout the study.

3.7 Data processing and analysis

The qualitative data were subjected to content analysis where the researcher analysed the information collected under various themes. On the other hand, the demographic data were analysed using the excel spreadsheet.

3.8 Ethical considerations

An informed consent was sought from the respondents after explaining to them the purpose of the research and assuring them that their participation was voluntary and free from any form of threat or coercion. The respondents were given the freedom to refuse to participate or to discontinue their participation at any time during the collection of data. The respondents were assured that all the information they provided would be strictly confidential and that their names would not appear on the questionnaires.

CHAPTER FOUR

CHALLENGES FACING RURAL WOMEN IN RURAL AGRICULTURAL PRODUCTION

4.1 Introduction

This chapter presents the study findings. It is divided into two main sections. The first section presents the socio-demographic characteristics of the respondents. On the other hand, the study findings on the role and challenges women face in rural agricultural production are presented in the second section of the chapter.

4.2 Demographic characteristics of the respondents

4.2.1 Age of the respondents

Table 4.2.1 shows the respondents' age. This indicates that the majority (63.4%) of the respondents were aged between 31 and 40 years.

Table 4.2.1: Age of the respondents

Demographic Characteristic	Frequency	Percentage
Age		
18-30	3	10
31-40	19	63.4
41-50	7	23.3
51-60	1	3.3
Total	30	100

4.2.2 Marital status and level education of respondents

The findings in Table 4.2.2 indicate that a majority (80%) of the respondents were married while only 6.7% accounted for the widowed respondents. The unmarried respondents accounted for 10% while the respondents who reported separated status accounted for 3.3%. Finally, a half of the respondents had primary level of education. While only 6.7% reported college/university level of education, 43.3% had secondary level.

Table 4.2.2: Marital status and education of respondents

Marital Status	Frequency	Percentage
18-30	3	10
31-40	19	63.4
41-50	7	23.3
18-30	3	10
Education		
Primary	15	50
Secondary	13	43.3
College/University	2	6.7
Total	30	100

4.3 Role of women in rural agricultural production

The study findings show that women farmers in rural areas play different roles in agricultural production. Particularly, women participate in most activities from land preparation to harvesting and storage of the harvested agricultural products. According to the key informants, women grow a variety of crops and participate in all stages of production. The study sought first to establish the types of crops grown mostly in the study site. As stated by one respondent:

People here mostly plant crops that are drought resistant such as sorghum and pigeon peas. We also plant maize and if you have land, we also grow mangoes (Respondent 26, 31-40 years old).

This was corroborated by a key informant who stated that:

Women here are mostly small-scale farmers and holders who grow a variety of crops to diversify and reduce the risk. The types of crops they grow in this area include pigeon peas, green grams, millet, sorghum and maize. They also grow fruits and vegetables such as kales, mangoes, tomatoes and citrus (KII 1, Ward Agricultural Officer, Male).

In the women's participation agricultural production cited above, there are different roles in different combinations that women play. Women are not only involved in enhancing household food security by supplying food from agricultural production but also look for markets for the products. In the study, these roles were essentially divided into two: off-farm and on-farm roles.

4.3.1 On-farm activities

The study findings indicate that in rural agricultural production, women provide labour in what constitutes on-farm activities. Women participate in land preparation, tending to livestock, planting, weeding, harvesting and transportation of the agricultural products. According to two respondents:

Mostly, we see women in the preparation of the land using cow dung, planting, weeding, harvesting and storage (Respondent 18, 41-50 years old).

Some women prepare land by clearing grass although they are helped by men on this. However, you will find them transporting manure to the farms, applying fertilizers and herbicides as well as guarding crops against birds and other animals (Respondent 10, 41-50 years old).

These findings suggest that women play active roles on the farm.

4.3.2 Off-farm activities

Findings further show that women complement the on-farm activities through off-farm activities. The off-farm activities encompass participation in activities such as liaison and coordination, marketing and decision-making. The off-farm activities also contribute significantly to household food security, as shown by the evidence below.

Both her and the husband decide what to be sold and used at home (Respondent 28, 41-50 years old).

She decides what to sell and keep for the home (Respondent,16, 31-40 years old).

Apart from decision-making, women's role in rural agricultural production is also felt in preparation of the harvested yields through sorting, winnowing and treatment. According to one key informant:

Women are the ones involved in the removal of chaff from cereals and prepare them for storage. The only problem there perhaps is that some do not have the right chemicals for treatment but they use traditional methods including certain plants. But this is not an issue since most farmers are small-scale and therefore do not have much to store (KII 2 Trainer, Female).

In this regard, two respondents has this to say:

It is my responsibility to ensure that once the cereals are at home, they are protected against pest invasion or going bad. Thus, we dry them in the sun and store them carefully in the granary for consumption (Respondent 27, 41-50 years old).

Thinking about the next season, women are involved in sorting best seeds that can be used to plant (Respondent 22, 31-40 years old).

Women are also involved in organizing for the farm inputs and marketing of the agricultural products. Women also attend agricultural meetings and training. According to one respondent:

I must ensure that when the rain comes, we have fertilizers and manure. For the market, we know the buyers and can call them to take, for example, one bag of maize to the market centre. (Respondent 7, 31-40 years old).

The combination thus of both on-farm and off-farm activities constitute a broad spectrum of women's involvement and participation in rural agricultural production.

4.4 Challenges women face in agricultural production

Study findings indicate that the involvement and participation of women in rural agricultural production is riddled with multiple challenges. These include gender relations and norms, leading to issues such as decision-making and land ownership issues. Other challenges include ecological issues of water and pests.

4.4.1 Unsupportive gender norms and relations

Findings show that there are underlying traditional gender inequalities that are reflected in agriculture. Essentially, land ownership issues and the extent to which women participate in agricultural decision making are important gender issues that pose challenges to women's role in rural agricultural production. Here below are some of the views from the respondents.

The land is for the husband. We do not own land and this is a big challenge (Respondent 29, 51-60 years old).

Men tend to be the owners, thus women cannot do permanent investment in land (Respondent 1, 31-40 years old).

For cattle, it is the men who decide when to sell. For chickens and goats women can consult about selling for home use especially for school fees and basic needs (Respondent 19, 31-40 years old).

Although lack of access to resources such as land is partly a function of gender norms, lack of arable land is a challenge facing rural agricultural production. The study area is semi-arid and therefore subject to ecological issues such as inadequate rainfall. The problem of land scarcity is compounded by lack of access to water resources for crop and animal husbandry and suppressive gender norms.

The husband has to give her permission. She does not know what to plant (Respondent 22, 31-40 years old).

She (woman) has to request where to farm (Respondent 4, 31-40 years old).

There is a problem of short rains. Crops do not do well and we do not have water for irrigation. It becomes a challenge as the crops dry out and yields go down (Respondent 10, 31-40 years old).

Women should be enlightened on the advantages of owning land (Respondent 3, 18-30 years old).

Although some challenges such as ecological uncertainty affect both men and women farmers, issues of gender norms specifically target women farmers.

4.4.2 Poor access to inputs and credit

According to the findings, women lack access to adequate farm inputs and credit facilities. Although men farmers also face similar challenges, it is amplified for women based on other socioeconomic disadvantages.

The main challenge we experience is lack of credit facilities. Other challenges include high cost of inputs, for example, high prices of seeds (Respondent 16, 31-40 years old).

It is a challenge especially when you have many things to do (other expenses) and you have to buy things like fertilizers. We also have to cover long distances to the agro vets (Respondent 2, 31-40 years old).

The sentiments on poor access to inputs and credit facilities was corroborated by key informants.

The planting season might come but farmers may still not plant or delay because of not having money to buy seeds for planting. When they delay, the consequences are clear: crop failure (KII 1, Ward Agricultural Officer, Male).

Women also lack access to farm inputs and credit facilities (KII 2, Trainer, Female)

Poor access to credit facilities means that women have challenges in purchasing farm inputs.

4.4.3 Poor participation in decision-making

Findings show that despite their role in agricultural production, women generally do not participate in decision-making.

She cannot decide on what to plant without consultation with the family (Respondent 21, 31-40 years old).

In most cases men usually decide because they are the breadwinners (Respondent 3, 18-30 years old).

After harvest, it is only the man who has the mandate to allow the produce to be used (Respondent 2, 31-40 old).

The inability to make critical decisions concerning farming makes women unable to plan and coordinate farming.

4.4.4 Lack of access to education and training

The study found that women do not have adequate knowledge and training on agricultural production and financial matters on agriculture. Other women do not know where to obtain quality planting seeds.

I can say that we do not have sufficient farming skills (Respondent 7, 31-40 years old).

We do not have skills in farming methods, modern technologies and agribusiness (Respondent 6, 31-40 years old).

Some do not know where to get quality seeds. Some sources have poor quality seeds for planting (Respondent 3, 18-30 years old).

4.4.5 Marketing challenges

Like men farmers, women farmers face challenges when selling/marketing their agricultural products.

Poor roads are a major challenge here. Even when you want to transport cereals, it is difficult. The buyers will not come and we are forced to take to them, at our cost (Respondent 24, 31-40 years old).

The market challenges faced by women farmers were further echoed by a key informant who added that farmers are also exploited by middle men or market ‘brokers’.

There is challenge in selling of produce because of poor feeder roads, which increase cost of production. Being exploited by middlemen is also a marketing challenge. Farmers have poor access to market information and major stores and middlemen control prices. Market forces come into play: surplus production and low prices. That is why it is important to have common control pricing and input acquisition (KII 2, Trainer, Female).

Study findings show that although women farmers play both on-farm and off-farm roles, they face discrete challenges specific to them and general to farmers.

4.5 Mitigating the challenges women face

The findings show that there are various challenges that women face in their participation in rural agricultural production. These include poor access to credit facilities and agricultural training, lack of land ownership and control, and marketing challenges. The study sought to identify how these challenges can be addressed and mitigated from the respondents’ point of view.

4.5.1 Advocacy for gender equality

The respondents felt that narrowing the gender gaps in terms of enhancing access to resources and opportunities can help ameliorate the challenges they experience. Overall, the social and economic limitations women face are caused by the patriarchal society. Essentially, the patriarchal set up promotes traditional gender inequalities that have far-reaching effects on women's role and success in rural agricultural production.

The solution perhaps is empowering women in all aspects especially their place in the society. You see, there is general discrimination. Attention when it comes to development is directed to or meant for men. But if we can have a way that women also matter and are accorded attention, we can be equal farmers (Respondent 21, 31-40 years old)

In my view, programmes to sensitize people just on importance of having women in the fore front is enough. Women are knocked down by masculinity and are often looked down upon. In agriculture, women need to be seen as equal to men (KII 2, Trainer, Female)

The study findings show that if the gender equality gap is narrowed, women can participate meaningfully in rural agricultural production. This is tied to enablers such equal participation in training and funding for agriculture.

By pursuing gender equality in agriculture, women can, for instance, get loans like men and other networks to support their work on farms (Respondent 30, 51-60 years old)

Thus, gender mainstreaming and advocacy programmes are important pathways for supporting women's rural agricultural production.

4.5.2 Improved access to credit facilities

Lack of access to credit facilities for agricultural development was cited as one of the challenges women farmers in rural areas face. In mitigation of the challenge, the respondents felt that this can be tackled through microfinance initiatives.

We find that since women do not have something to hold a loan for (collateral), it is hard to get a loan to buy seeds and fertilizers. So, if we can have microfinance schemes where we do not need to have a lot of property to acquire loans, that can solve the problem (Respondent 19, 31-40 years old).

I also think that groups can help. For example, we could have support groups where women farmers can have revolving funds to boost their farming (Respondent 26, 41-50 years old).

The above sentiments on improving credit facilities through microfinance initiative were corroborated by a key informant.

If women can have regular access to funds, they can really invest in agriculture. This can be done through agricultural funds that target small-scale farmers and women for that matter. These are loans that are easily accessible to farmers without robust property (KII 2, Trainer, Female).

Women groups and microfinance initiatives were identified as ways of improving women's access to credit facilities and funds for farming.

4.5.3 Land ownership for women

The problem of resource control, specifically access to and control over land, can be mitigated through women land ownership. The respondents cited lack of control over land as a key barrier to farming. In response to this, they felt that owning land can help them plan for farming and make decisions.

One problem is that women have to ask for a piece of land or rent one. This is not sustainable since one cannot plan well and be in charge of what to produce and control over the produce. However, if one can own a piece of land, it is much easier to do farming (Respondent 35, 41-50 years old).

Lack of land ownership by women was cited as a major barrier to accessing funds. A key informant underscored the importance of land ownership in even mitigating challenges such as poor access to credit since the land can act as collateral for securing loans.

With land, it is not even about freedom of production. It is also about the autonomy and worth for credit (KII 2, Trainer, Female).

In the push for land ownership, the idea of gender equality came up and was emphasized. This pertained to property inheritance for women.

If women can inherit for, instance land, this can empower them as they have access to a critical means of production (Respondent 28, 41-50 years old).

Changes in legal and policy frameworks were also cited as ways of pushing for land rights ownership by women. This can encourage the present and potential women farmers to do more farming.

Although I hear women have equal land rights in law, it is not there in reality. There are lot of things that prevent this including gender discrimination. If the barriers can be tackled and women start owning land, it can be boost for women farmers and those who wish to be farmers (Respondent 24, 31-40 years old).

Thus, access to land as a factor of production can help mitigate the challenge women face in rural agricultural production by not only increasing control over land but also access to credit facilities.

4.5.4 Agricultural training for women farmers

One of the challenges identified in the study is knowledge and skill gap among farmers in general and women farmers in particular. In order to counter this problem, the respondents said that their capacity to do well in farming can be enhanced through agricultural training. This can enable them access best farming technologies and best practices.

We would also like to have agricultural officers training us or sending us for agricultural seminars and shows. This can help address the problem of having farmers who are not updated on the farming skills and crop production (Respondent 6, 31-40 years old).

This idea was affirmed by a key informant.

Training is very essential given that most farmers might not know crop and animal husbandry well. Technologies that are merging can also be imparted on them to improve production (KII 1, Ward Agricultural Officer, Male).

Farmers can also be trained on marketing skills to counter the marketing problem. This would also equip them with financial management skills to support their agricultural production

Women farmers can also get trained on marketing and financial management. Framing is agribusiness and training can benefit them in farm economics (KII 2, Trainer, Female).

Supporting women in agricultural production would thus entail building their capacity through best farming techniques, farm management, and produce marketing.

4.4.5 Infrastructural and subsidy support

The study identified transport as one challenge women farmers face. In response, the respondents called for improvement of physical infrastructure. This can counter the challenge of impassable roads that increase cost of production and exacerbate marketing problem.

The bad roads can be improved to allow easy access and transport. When it rains, it is difficult for produce to reach the market. Better roads can help (Respondent 12, 31-40 years old)

Further, the authorities in agricultural sector were called upon to allow women farmers access to subsidized farm inputs. We know that the government has fertilizer and other products that have affordable prices for farmers.

Most farmers in this area practise small-scale farming. If the County or national government can sustain the subsidized farm inputs, this can really benefit the farmers, and women for that matter (KII 2, Trainer, Female).

Thus, supporting women farmers with subsidized farm inputs and improving the physical infrastructure would alleviate the marketing challenges as well as making farming affordable especially to small-scale farmers.

CHAPTER FIVE

DICUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a discussion of the study findings. The discussion is a synthesis of the findings in respect to the study objectives, while linking the findings to other studies in the literature. The chapter also presents a conclusion and recommendations drawn from the study. The chapter ends with a proposition on areas for future studies.

5.2 Challenges facing rural women in agricultural production

5.2.1 Roles that women play in agricultural production

The study findings show that women's role in rural agricultural production is two-fold: on-farm and off-farm activities. Similar findings were reported by Copland and Guertin (2013). Women play an integral role in agricultural production especially in rural areas. Rural women produce half of the food for households (Copeland and Guertin, 2013). In addition, women are also likely to spend their income on household welfare including food than men. Indeed, the centrality of their roles in household food production has prompted a shift to empowering women in order to achieve household food security. According to Mehra and Rojas (2008), one of the failures in efforts to reduce hunger and increase rural incomes is the failure to focus on women as farmers and as farm workers. This is because women's role in agriculture is mainly characterized by food production. On the other hand, women are involved in agribusiness and informal savings markets such as merry-go-rounds (McCarney, 1991). This role satisfies one requirement of food security- ability to purchase food. Women's role in agriculture, and specifically in household food production and security, however, varies by location, age, ethnicity, crop, and cycle of production (Sofa and Doss, 2011). The roles also vary substantially between and within areas and are rapidly changing in the face of economic and social changes that are transforming the agricultural sector.

Women have been a key pillar in rural agricultural production as they provide 60-90% of subsistence agricultural labour (McCarney, 1991). They are directly involved in on-farm activities that are part of household food production. Women's involvement in on-farm activities include clearing and land preparation, planting, weeding, applying fertilizers, as well as harvesting. In addition, activities such as tending to and milking livestock constitute roles that women play in contributing to household food production. According to Sofa and Doss (2011), weeding and harvesting are often female activities. Further, in rural areas, the overall labour burden of women exceeds that of men. This labour includes a high proportion of unpaid household responsibilities (Sofa and Doss, 2011). Apart from being actively involved in on-farm activities, women play the facilitation role of labour provision in farms. This is where women play intermediary roles of coordination and cooking for the people working on farms.

Apart from the on-farm activities, women's role in household food production and security is manifested in their involvement in off-farm activities (Mehra and Rojas, 2008). These include storage, processing, sorting, grading, packaging, as well as marketing of food or merchandising. In addition, women are involved in the preparation of items into various forms or ready-to-eat dishes. According to McCarney (1991:158), women "provide 90% of the labour for collecting household water and fuel, 80% of the work in food storage and transport from farm to village" and "60% of the work in hawking and marketing." Another area of women participation in household food production and security is their involvement in some of the decision-making processes. As McCarney (1991) reckons, women have considerable decision-making power on crop production issues such as timing of planting, location of crops, intensity of crop management, as well as use of farm inputs.

5.2.2 Challenges women farmers face and mitigation

In the demonstrated role in rural agricultural production, women encounter various challenges as shown by the study findings. The challenges are broadly social (gender norms and relations), economic (funding), and structural (marketing).

Due to the social and economic disempowerment as well as gender inequality that women suffer from, their potential to fully contribute to rural agricultural production is curtailed (Arend, 2011). Women grossly lack access to land and natural resources for crop and food production. Further, the economic disadvantages inhibit sustained crop production and also impends ability to buy food. Women also face problems in accessing agricultural support services such as credit facilities and agricultural training. McCarney (1991:158) notes that “when available credit and technology and financial training are given, they are given first to men and often only to men, who own almost all of the land and grow most of the cash crops”. Mburu *et al.* (2015) observe that in Yatta, farmers employ inappropriate climate change adaptation practices mainly due to lack of training. According to Copeland and Guertin (2013), although women produce 50% of the world’s agricultural output, they only own approximately 2% of the land.

Nevertheless, appropriate changes in public policy frameworks in rural agricultural production can support the roles of women. These include policy frameworks in mainstreaming, women land ownership, access to credit facilities, technology and agricultural training.

5.3 Conclusion

Women play an integral role in rural agricultural production. Consequently, they are instrumental in household and national food security as well as economic development. This is owing to the centrality of rural agriculture in national development in a complex value chain. The role of women in rural agricultural production thus cannot be overlooked. Women’s participation in on-farm and off-farm activities is a pillar to agricultural development. The far-reaching impact of women participation in agricultural production is not only felt in food security but also in sustainable development.

However, the demonstrated impetus women have in rural agricultural production is riddled with various challenges that, in different combinations, limit women's full participation. Although some of the challenges are common to all farmers, others have unique implications for women farmers. Lack of land ownership and poor access to credit facilities are some of the challenges tied to women farmers, and these are compounded by poor access to training and extension services.

In response, the challenges can be mitigated through gender inclusion and parity mechanisms. The challenges rest on prevailing gender inequalities within gender norms and relations. Thus, programmes and initiatives that seek to empower women farmers are imminent if society has to reap full benefits of women's potential in rural agricultural production. These include gender responsive rural agricultural development as well as supportive legal and policy frameworks, including property/land ownership, that directly and indirectly strengthen the agricultural capacities of rural women farmers.

5.4 Recommendation

Based on the findings, the study makes the following recommendation.

Rural agriculture policies, frameworks, and programmes to target women farmers and include them in the mainstream agricultural activities and support structures as incentives, extension and training services

5.5 Areas for further research

Future research should focus on the urban and peri-urban agricultural production among women for comparative purposes with the rural research.

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SECTION C: ACCESS

5. Do women and men have equal access to land?
Yes [] No [] Both [] either []

If the answer to the above is no, what are the challenges?

6. What challenges do women have in accessing inputs for agricultural production?
7. How can the above challenges be solved?

SECTION D: CONTROL

8. After harvest can women decide on what is to be consumed at the household level and that which will be sold for income? Explain your answer.
9. Do you own the land that you do agriculture on? Can you decide to sell it or what will be planted without having to consult your husband or another male relative?
10. Who determines the utilization of the returns accrued from the sales? Explain your answer.
11. What are the factors influencing agricultural production in the this area.?

APPENDIX II: Key informant interview guide

Institution: Position in institution:

Sex:

1. What type of farmers do you work with?
2. Which type of crops are grown in this area?
3. How do you reach the women farmers for training?
4. What are the challenges faced by women in agricultural production in this area?
5. How can women access the agricultural extension officers easily?
6. How can agricultural production be increased?
7. What challenges do women face in the selling of the produce from the farm?
8. Who controls the price of the agricultural production?
9. What policies can be improved on at the Sub-county level to improve agricultural production and also empower women?