

**GENDERED ACCESS AND CONTROL OF LAND, DAIRY PRODUCTS AND  
THEIR INFLUENCE ON HOUSEHOLD WELFARE IN MURANG'A COUNTY,  
KENYA**

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**JUNE, 2020**

**DECLARATION**

I confirm that this thesis is my original work and has not been presented at Kenyatta University or any other institution for academic qualification or certification. The thesis has been finalized by referenced works properly acknowledged. Where text, data, graphic, pictures or tables have been borrowed from other works-including the internet, the sources are specifically recognized through referencing in accordance with anti-plagiarism regulations.

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### **DEDICATION**

This study is dedicated to all resilient women in Kenya who, in spite of the many socio-economic and political challenges they encounter, they are able to proof that “*what men can do women can do and sometimes even better*”.

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## ABSTRACT

This study sought to investigate the gendered access and control of land and dairy products with a focus on their influence on household welfare. The study was done in Murang'a County-Kenya, guided by the following objectives: to establish the status of access and control of dairy products and land by men and women; to examine the status of welfare in households practicing dairy farming and perceptions of men and women on the influence of access and control of land and dairy products. Additionally, the study identified strategies that can be put in place to enhance access and control of land and dairy products for improved household welfare. Four null hypotheses were also tested to establish the relationship between gender and access as well as control over land and dairy products. The study was guided by the Marxist feminism theory advanced by Friedrich Engels (1884) and Women Empowerment Framework (WEF) by Sarah Longwe (1991). The study utilized cross-sectional research design while purposive sampling technique was used to select Kigumo Sub-county as the area of the study. Further, simple random sampling technique was used to select four hundred and forty-two (442) male and female headed households practicing dairy farming in the Sub-county to participate in the study. Selected community leaders and key county officers were included as key informants. To generate the required data, the study utilized interview schedules for the selected male and female household heads, a guided questionnaire for the key informants and an observation checklist. Quantitative data was analyzed through the use of Statistical Package for Social Sciences (SPSS) while qualitative data was analyzed on the basis of study objectives. The study established that the main dairy products included dairy cows, milk, manure, calves and biogas which were found to be differently accessed and controlled by men and women. It is these differences in the control and access to the land and dairy products that were found to have differential influence on household welfare. The household welfare was gauged on the basis of the parameters drawn from the Kenya Constitution 2010 Article 43 on social and economic rights namely health, housing, food, water and education. In this respect, the study established that women and men's access and control over land and dairy products had a relationship with the provision of household welfare based on the above parameters, as further confirmed by the testing of the null hypotheses. Male and female household heads were found to hold different perceptions on gender and access/control to resources with a bias against women, mostly influenced by culture, religion, awareness on legal requirements and individuals' level of formal education. The study identified and recommended gender awareness raising, enhancement of adult education program, enforcement of legal requirements on human rights as the main strategies for enhancing gender equity on access and control over land and dairy products for enhanced household welfare.

**ABBREVIATIONS AND ACRONYMS**

ADP:	Africa Development Programme
BPA:	Belgium Platform of Action
CEDAW:	Convention on Elimination of all forms of Discrimination against Women
CIDP:	County Integrated Development Plan
COHRE:	Centre on Housing Rights and Evictions
FAO:	Food and Agriculture Organization
GOK:	Government of Kenya
ICESR:	International Covenant on Economic and Social Rights
IFAD:	International Fund for Agricultural Development
ILRI:	International Livestock Research Institution
KHRC:	Kansas Human Rights Commission
KNBS:	Kenya National Bureau of Statistics
LDF:	Livestock Development Fund
LIGF:	Livestock Input Grant Fund
NACOSTI:	National Council of Science, Technology and Innovation
NALEP:	National Agriculture and Livestock Extension Programme
MCC:	Murang'a County Creameries
OECD:	Organization for Economic Cooperation and Development
SDGs:	Sustainable Development Goals
SPSS:	Statistical Packages of Social Sciences
UNDP:	United Nations Development Programme
URT:	United Republic of Tanzania
WADD:	Women in Agricultural Development Directorate
WEF:	Women Empowerment Framework

## OPERATIONAL DEFINITION OF TERMS

**Access:** It is the opportunity for women and men to utilize a particular resource.

**Control:** Refers to capability of women and men to have absolute or partial authority to make decisions on issues related to family resources.

**Dairy farming:** Agricultural activities which focus on long-term production of dairy products for eventual sale/ generation of income and household use.

**Dairy products:** These are all the products which are produced from dairy farming. They include but not limited to manure, biogas, milk, calves and meat.

**Gender:** It is the social-cultural distinction between women and men in the society which influences power relations in access and control of all resources.

**Household:** In this study, it is a family consisting of two parents and their children living in the same house at the time of the study.

**Household welfare:** In this study, this is being measured by the provision of quality basic needs as defined by Article 43 of Kenya Constitution (2010) under the social and economic rights. The provisions include health, housing, food, water and education.

**Perceptions:** In this study, it is the way study respondents regarded, understood and interpreted access and control of land and dairy products between men and women.

**Status:** It is used in this study to mean the situation of access, control and household welfare in both male and female headed households at the time of study.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

Agriculture is not only the backbone of economic growth and poverty reduction in most countries in the world but also the main source of livelihood. There is worldwide concern over the gendered access and control over resources including those related to agriculture. Men and women have unequal access and control over resources. Determinants of who is either disadvantaged or advantaged are determined by various social, economic and sometimes political factors. Food and Agriculture Organization (2011) report observes that, while most farmers in commercial agriculture are men, women are mostly involved in subsistence farming which is central to the supply of food at the household level. The same report explains that although in most agricultural settings, women participate in all stages of agricultural production, they have minimal decision-making authority and control over resources including land.

Various studies have raised concerns over gender gaps in agricultural production especially the gendered access and control between women and men. For example, a study done by Gicheru (2013) on gender gaps in farming in Gatanga Division, Murang'a County observed that women compared to men have partial user rights and absolutely no control over agricultural benefits even though they are the major providers of labor in agricultural production. The same is echoed by different studies by Palacios-Lopez et al. (2015) and Sisei (2016) focusing on provision of agricultural labor and rural agricultural mechanization and women respectively.

Further, the United Nations (2016) report observes that more than 80% of agricultural landowners worldwide are men which means that only less than 20% of land is owned

by women. This has serious economic implications in that the insecure land tenure for women may limit them from acquiring monetary and physical inputs necessary for advancement of land for high productivity and consequently reducing their capability to pledge land as guarantee to acquire agricultural loans and credits. This notwithstanding, the OECD report (2016) observes that access and control of agricultural production is influenced by ownership of land which in Africa, Kenya included, is a key factor in all agricultural undertakings. It is then no wonder that women are more on subsistence farming with low production which receives less institutional support than commercial farming which mostly benefits men.

Women in most developing countries, compared to men, have little or no control over agricultural production (World Bank, 2012). In all agricultural undertakings, women contribute labor as unpaid workers in agricultural activities which include taking care of kitchen gardens, vegetable and tree crops close to their houses, as well as large and small livestock. Studies observe that most of these work is not described as “active economic engagement” in the gross national product though they are critical for the household welfare.

Other studies established that in Sub-Saharan Africa, agricultural productivity by women is low due to limited access and lack control over agricultural resources although they provide about 40% of the agricultural labor force, (Palacios-Lopez et al., 2015, Cervantes-Godoy, and Dewbre, 2010). This may in many ways affect the household’s welfare and also create a gender productivity gap in agriculture. For example, the gender difference is projected to be twenty-three percent (23%) in

Tanzania and sixty-six percent (66%) in Niger (O'Sullivan et al. 2014). This gap has direct social and economic consequences for household welfare. Paudel et al. (2009) in his study on gender aspects in livestock farming in Tanzania observed that, most women have access to dairy products including milking, processing and packaging for sale even though very few women participate in selling of milk and its products. Such disparities, evidently in gender disparities in use and control over these resources may have adverse consequences on the welfare at the household level as women are at the center of critical reproductive roles and responsibilities (Kimani, 2008).

In some parts of Kenya, studies underscore a similar concern over the existing gender gap in that women own less than 5% of registered land although they contribute over 80% of the agricultural labor force (FAO, 2008, Kimani, 2008). The lack of ownership influences access and control over land and its production which in turn may influence the provision of adequate food and other welfare needs for the family. This does not in any way exclude the dairy farming and its accrued benefits whose access and control along gender lines can negatively impact on the general welfare of the households. In line with this, World Bank (2013) report observes that livestock production contributes ten percent (10%) of total and thirty percent (30%) of agricultural GDP in Kenya. This notwithstanding, such gender disparities and their counter productivity on household's welfare can adversely influence the achievement of Sustainable Development Goals (SDGs), especially the reduction of poverty, provision of quality food as well as good health and family welfare.

Women in most developing countries compared to men have little or no control over agricultural resources. The inequality is especially in land and agricultural products both from subsistence and commercial production for cash and food crops as well as livestock. Further, agricultural production at the household level contributes to the fulfillment of the Constitution of Kenya (2010) Article 43 on social and economic rights of every Kenyan in regard to provision of enough food of good quality, freedom from starvation, clean and accessible water, quality education and health.

In addition, gendered access and control over resources can result into violation of the legal frameworks such as the Constitution of Kenya (2010), International Covenant on Economic and Social Rights (ICESR) (1976), the Solemn Declaration on Gender Equality in Africa (2004) and the Kenya National Policy on Gender and Development (2008). Hence, the need for this study which focused on investigating the gendered access and control of land and dairy products with emphasis on their impact on the welfare of the families. The study was done in Murang'a County, Kenya where dairy farming is a major agricultural occupation by both small and large scale farmers.

### **1.2 Statement of the Problem**

Studies have established an existing gender gaps in access to and control over agricultural resources. Evidently, gendered access and control over agricultural resources, products, means of production and utilization has its bias in that women are overly disadvantaged. This has resulted into an inequality in access and control of land and dairy products between men and women which is likely to influence the status of household welfare as stipulated in the Kenyan constitution, SDGs and other regulatory frameworks on gender equity and fulfilment of human rights. The problem of this study

was informed by the observation that despite the remarkable progress at international, regional and national levels in addressing gendered access and control over resources, the disparities still exist which is likely to influence the provision of household welfare. Thus, the concern of this study being the gendered access and control of land and dairy products and their influence on the family welfare.

The indicators of household welfare according to this study have been based on Article 43 (a, b, c, d, e & f) of Kenya Constitution (2010) on social and economic rights as access to quality health services, decent housing, adequate and quality food, safe water for household use and quality education for school going children. The study was done in Murang'a County, Kenya, where dairy farming is a major agricultural occupation. The reference of land in this study is based on its importance as a factor of production in dairy farming.

### **1.3 Purpose of the Study**

The purpose of the study was to investigate the gendered access and control of land and dairy products and their influence on household welfare in Murang'a County.

### **1.4 Objectives of the Study**

The study was guided by the following objectives:

- i. To establish the status of access and control of land and various dairy products by women and men in Murang'a County.
- ii. To establish the status of welfare in households practicing dairy farming in Murang'a County.
- iii. To determine men and women's perceptions on gendered access and control of land and dairy products in Murang'a County, Kenya

- iv. To identify strategies to be put in place to improve access and control of land and dairy products for improved household welfare in Murang'a County, Kenya.

### **1.5 Research Hypotheses**

The study sought to address the following null hypothesis:

H<sub>01</sub> There is no relationship between women and men's access to land and household welfare

H<sub>02</sub> There is no relationship between women and men's access to dairy products and household welfare

H<sub>03</sub> There is no relationship between women and men's control of land and household welfare

H<sub>04</sub> There is no relationship between women and men's control of dairy products and household welfare

### **1.6 Justification and Significance of the Study**

The study is justified in that it focused on the gendered access and control of land and dairy products and their influence on household welfare in Murang'a County - Kenya, which touches on issues of human rights. Further, the study is relevant to the achievement of SDGs especially goal number one to six which focuses on provision of welfare needs and goals 5 and 10 on gender equality and reduced inequalities. It is also in line with Kenya Vision 2030 whose social pillar supports the advancement of gender parity and justice in user rights and decision making in relation to all economic resources including land and dairy products and the Kenya Constitution (2010) Article 43 on social and economic rights. The study is also justified because it aimed at

establishing the underlying forces that perpetuate and reinforce gender variations in access and control of land and dairy products that could have negative impact on household welfare given the work, policies, strategies and legal instruments that are put in place to ensure equality and improved living standards for all.

The study is therefore significant in that the knowledge generated may contribute to the process of enhancing women and men's access and control over resources by filling the existing gaps and shedding more light on the gendered access and control over land and dairy products and their influence on household welfare. Invariably, the study has suggested practical recommendations and contextualized strategies that could be adopted to promote and enhance household welfare in gendered access and control of land and dairy products.

It is also anticipated that the outcomes, deductions and suggestions generated from this study will advance a better understanding of the gendered access and control of land and dairy products and their influence on household welfare in Murang'a County. This would add value in designing appropriate and contextualized strategies for the enhancement of household welfare through promotion of gender fairness and justice in access and control over resources, informing policy formulators and agencies concerned with equal rights for all such as: civil societies, government and other development partners on best practices that could be adopted to facilitate and promote household welfare through impartiality in access and control of land and dairy products. Finally, the outcomes of this study will contribute to the prevailing body of knowledge in related fields, fill prevailing academic gaps and offer a beginning for further explorations.

### **1.7 Scope and Limitations of the Study**

Though there are many agricultural products that can be investigated in terms of impacts of gendered access and control, this study focused only on dairy products and land as an important factor in dairy production and their influence on household welfare. The study was done in Murang'a County, Kenya. As such, the study targeted the households practicing dairy farming in the area of study. Thus, while other agricultural products beyond the dairy products were outside the scope of the study, the same is true of issues beyond access and control of land and dairy products in relation to household welfare. Another limitation is that although dairy farming is an occupation in many counties in Kenya, the study outcomes, deductions and recommendations may to some extent be definite to Murang'a County due to the uniqueness in social, economic and political setting. This therefore means that although the findings could possibly be generalized to other counties with similar social, economic and political settings, the same should be done with caution.

## **CHAPTER TWO: REVIEW OF RELATED LITERATURE**

### **2.1 Introduction**

The purpose of the literature review was to bring out the theoretical and empirical literature related to access and control of resources and their influence on people's welfare with a specific focus to the household. The review helped to locate the study within the existing knowledge with a view of identifying the knowledge gap that this study intended to fill. The subsections are based on the objectives of the study as indicated by the following sub-titles: the status of access and control of land and agricultural products across the world, the status of household welfare in a gendered access and control of resources and the strategies to be put in place to improve household welfare within the gendered access and control of land and dairy products. Theoretical and conceptual frameworks that guided the study are also presented.

### **2.2 Access and Control of Land and Agricultural Products across the World**

According to the United Nations Human Rights Report (2013) on "*Realizing women's rights to land and other reproductive resources*," gender inequality in access and control of resources are closely associated with women's poverty, deprivation and segregation. The report further reveals that there is direct correlation amid women's accessibility, use and control of the key resources and improved standards of living and protection of citizen's rights, such as housing, food, education, property and health. The report also notes that accessibility and decision making over property, particularly land improves women's social standing and confidence and this ultimately enhances family welfare (United Nations Human Rights Report, 2013).

In addition, the UNDP report states that regardless of the varying roles of women from region to region across the globe in agricultural production, women make crucial contributions especially in developing countries. Women are the major suppliers of food therefore they undertake a very important role in sustaining families, communities and nations (UNDP, 2006). Additionally, a report by KHRC (2003) reveals that rural women are the major food suppliers accounting for approximately 75% and subsequently accounting for over 50% of the food producers and suppliers worldwide. Worldwide, the role of women in food provision is critical because it contributes to sustenance of their own livelihood and that of the society in general.

Generally, some countries have made modest advancement in promotion of gender equality in property rights. However, there is no country worldwide that has achieved 100% gender equality in property rights (Ode, 2007). In this context, the World Bank report (2012) indicated that it is clear that women's access and control over property still remains a worldwide issue as depicted mainly in the growing economies such as Asia, Africa, and Latin America. These regions are still lagging behind despite their being signatories to the international, regional and national legal instruments and policy guidelines that promote gender equity (World Bank, 2012). In fact, Rashid (2013) in his study "*Securing women's land and property rights: A critical step to address HIV, Violence and food security,*" noted that in spite of the realization and acknowledgment of the need for gender equality in agricultural sector, women across the globe still face significant barriers related to accessibility and decision making over vital resources such as livestock, land, houses as well as finances.

In addition, Odeny (2013) in his study *“Improving access to land and strengthening women's rights in Africa,”* observes that though global, regional and state human rights documents have been campaigning and advocating for gender equality in property rights, men still dominate access, and control of key natural resources including land. As reported by the UN- Habitat (2006), restructuring in the promotion of gender parity in accessibility and decision making over productive resources have been slow and flawed with obstacles from the society.

The World Bank (2012) report on *“Women's economic power in Latin America and the Caribbean”* discloses that women's revenue contributes up to 30% in poverty reduction in the community. Equally, Giovarelli et al. (2013) report on *“Land tenure, property rights and gender”* revealed that enhancing gender parity in accessibility and control of land would lead to reduction in poverty and quality household welfare. The same sentiments are recorded by FAO (2013) report on gender equality and food security which upholds the significance of gender parity in resources allocation and use as a tool against food insecurity.

In relation to dairy production, the studies have shown that gender inequality is dominant in the provision of labor and distribution of benefits accrued from the undertakings. For instance, in India, Paul et al. (2015) found that the dairy activities in which joint decision making was significant included practices like artificial insemination service, care and management of pregnant animals, milk and its processing. The study conducted by Seema et al. (2008) on *“Gender participation and livestock management in India”* stated that most dairy farming routine duties such as

fodder collection, spraying of animals and cleaning sheds, giving animal feeds, taking care of the animals and milking were performed by women while sale of milk and its products, buying of animals and veterinary services were mainly done by men.

Studies show that regardless of the huge contribution of women in livestock production and management, their economic incentive and recognition remains insignificant (Tangka et al., 2012). The studies further suggest that substantial gender differentials are observed not only on the use and control of the benefits accrued through dairy farming but also in terms of making important decisions on strain selection, choice of types of livestock to keep and the reasons for keeping specific livestock type in specific households by gender, household type, wealth status and age (FAO, 2012, Kristjansson et al., 2010). In addition, women mainly prefer to possess livestock breeds that require less labor, time and expenditure. This is because livestock management activities such as feeding the animals, watering, cleaning the pen remains to be women's role mainly under mixed crop livestock system (Aregu, 2014).

Galiè et al. (2015) in their study on '*Exploring gender perceptions of resource ownership and their implications for food security among rural livestock owners in Tanzania, Ethiopia, and Nicaragua*' revealed that the sale of milk and animals accrued income that could be used to purchase food thus improving on household diet. In addition, they found that the daily availability of milk for household consumption played a very important role in enhancing the nutrition level and health of all the members of the household and specifically in children. Further, the livestock manure improved and increased food production for household use and the surplus was sold in

the local. In addition, selling of livestock in the local market generated income for use during emergencies and to protect the household from starvation (Galiè et al., 2015).

Bravo further revealed that in societies where women access to land is restricted to men; dairy production is the only choice (Bravo-Baumann, 2000). However, Thornton and others indicated that approximately two-thirds of deprived livestock farmers are mainly women (Thornton et al, 2002). This notwithstanding, women are discriminated in possession and control of land and dairy products since they share responsibility with men and children when caring and feeding animals but the biggest proportion of labor in dairy production is borne by women than men (Tung, 2005). Another study carried out in Nepal on gender roles established that duties and responsibilities in dairy farming are jointly conducted by men and women in rural areas (Paudel et al., 2009). However, there were variations in the amount of labor contribution between men, women and children. Men and boys were mainly performing milking duties as indicated by a study on gender aspects in livestock farming in Nepal (Paudel et al., 2009).

However, Rola and others noted that most women are not willing to improve their dairy production even after the advancement in technology. This is because when dairy farming is commercialized, the decision making in relation to its income and sometimes the entire initiative shifts ownership to men. This was found to be common due to women's minimum access to land and credit (Rola et al., 2006). They further observed that given the vulnerability of women in terms of their ability to start and manage the businesses, the commercialization of livestock farming and the subsequent control by men, implies that they will continue being employees instead of being self-employed

(Rola et al., 2006). In addition, Galiè et al. (2015) found that in Tanzania, women sold and benefitted from the income generated from livestock and milk considered small while men mainly focused on livestock and dairy cows and bulls considered large for sell and upkeep. Further, the study revealed that a woman would have control over milk as long as the quantities and benefits accrued from the sale of milk are minimal but as long the quantities and benefits increases the control shifts to her husband.

Quisumbing et al. (2013) on their studies "*Gender inequalities in ownership and control of land in Africa*" noted that in Egypt, only less than 7.4% of the newly reclaimed land was distributed to women who were graduates in agricultural programmes. In addition, the redistribution of land after independence in Morocco also depicted inequality where only 4 percent of the land was allocated to women. Similarly, in Ghana women have the user rights only, therefore limiting their capability to acquire credit because they do not have the required guarantee. The study further noted that most of the agricultural traders in Africa are women although credit programmes do not cover their business activities.

The African Gender and Development Index (AGDI) (2004) survey in Africa revealed that women's land use rights were on average less than that of men. Additionally, the African Development Bank (ADB) report (2016) on "*Land ownership in Nigeria, Uganda and Tanzania*" showed that the percentage of women land holders was extremely low; approximately 15% of women hold land, with differences ranging from 10% to 19.7% in Tanzania, Nigeria and Uganda. Additionally, the report noted that disparity in land ownership is worse in Nigeria where women own only 4% of agricultural lands. This land insecurity for women has resulted into low social status, self-esteem and financial dependency thus impeding their economic empowerment

(ADB, 2016). Consequently, women access resources through their male relatives who are husbands, fathers, sons or brothers (Bikaako and Ssenkumba (2006)). As a result, women gender discrimination in ownership, control and access to property remains predominant (Marjolein, 2002).

In contrast, Njuki and Sanginga (2013) in their study “*Women, livestock ownership and markets*” found that women have user rights only in relation to land, livestock and the products accrued from them. Further, according to a report by IFAD (2004) women feed and take care of animals and use livestock products such as manure, milk and eggs for family consumption and local sales. Similarly, Njuki and Sanginga (2013) noted that women are also allowed to undertake subsistence farming for household consumption.

Provision of labor by gender in dairy production has been noted by Kimaro et al. (2013) in their study on “*Labor contribution to the dairy farming in Tanzania*” which showed that both men and women contributed at least some roles in dairy production. In addition, other studies by Kimaro et. al. (2013); Njarui et al. (2012) and FAO (2005) observed that major responsibilities in subsistence agriculture are undertaken by women. Specifically, in Uganda, Njarui et al. (2012) found that provision of labor in dairy production was mainly done by women who provided over fifty percent (50%) of the total labor needed.

Kimaro et al. (2013) found that in Arumeru, Tanzania, routine duties in dairy farming like feeding the animals, cleaning the sheds and milking the cows was mostly undertaken by women. This is because, traditionally, routine dairy farming duties are

associated with women and men are engaged in dairy farming which are not routine in nature such as veterinary services, purchase and sale of livestock.

Kenya on her part has ratified various universal human rights mechanisms such as the African Charter on Human and People's rights besides formulating state laws such as the Constitution and Acts of parliament that are appropriate in enhancement and achievement of rights of every citizen, including property rights for women (Kameri-Mbote, 2007). However, just like other African countries, Kenya is challenged in the promotion and execution of gender parity approaches and mechanisms in resources allocation and use. Though women are considered in the succession clause, relatively, men have a superior right (KHRC, 2003), perpetuating gender inequality.

In most societies, possessing land is considered a sign of achievement, prosperity, or social power. Therefore, women land rights are critical in determining her status in the society, financial independence and economic empowerment. It is also a strength which determines her personality, political status and involvement in decision-making mechanisms. However, FAO (2011) reported that access, control and ownership of land is still not responsive to gender needs.

Njuki and Sanginga (2013) observed that Kenya, like most African countries accord women land access rights but with no control or ownership rights. Women are allowed to utilize land to plant vegetables and other subsistence crops consumed within their homes but they cannot claim ownership. Kameri-Mbote (2002) reported that land in Kenya is mainly registered in the names of the male members of the households. It is estimated women hold only one percent of land title deeds which accounts for 5% of

registered lands nationally (KHRC, 2003 & NALEP, 2003). The reports further indicate that even though women's representation in formal land ownership is insignificant, they constitute 64% of subsistence farmers providing approximately 60% of farm-delivered income and on average work three hours longer each day compared to men (KHRC, 2003). From the above accounts, it is apparent that though Kenyan statutory laws provide for women's rights to significant resources such as land, livestock and housing, these rights are not yet fully achieved.

Similarly, Beth (2001) in her study on "*Rights to livestock: empowering women to achieve food security*" indicated that most labor in zero grazing is usually provided by women, nevertheless, they cannot achieve benefits proportionate with their labor contribution thus unable to improve on production. Further, the study found that most women owned livestock through self-help groups (Beth, 2001). Studies have also shown that geographical location of the households either urban or rural determines who does what in dairy production. For instance, Njarui et al. (2012) observed that in Machakos, men contributed more labor at 17% in the dairy production than women at 12%. The same was observed in Wote town where women were found to provide minimal labor in livestock production compared to men. However, on the whole, women were found to provide approximately 33% of labor in milking as compared to other dairy farming activities while men mostly planted animal feeds and sprayed acaricides on the livestock.

It is also important to note that in Kenya; about 67% of the total labor required in running the dairy production is externally sourced. This implies that internal sources of

labor are not sufficient to run the dairy farming business smoothly and successfully (Njarui et al., 2012). Further, the study reported that outsourced workers provided about half of the labor needed in dairy farming in the Kenyan semi-arid areas. A study done in Kiambu found that less access to extension services and credit facilities was ranked as the most constraining factors on the involvement of women in zero grazing. Less access to extension and veterinary services by women was mostly related with the position of men in the families as household heads as well as society (Karen, 2013). The study further reported that less access to credit facilities was associated with lack of control of resources among women which limits their ability to secure financial assistance. This is because the resources associated with zero grazing dairy farming that could assist women in securing loans are in most cases under the ownership of men which includes land, cattle, milk and other dairy products (Karen, 2013).

Based on the reviewed literature, women have limited access and lack control of dairy farming and land although they provide the largest percentage of labor. It is also important to note that various studies done in diverse areas of the world give different status of men and women access to and control over agricultural resources including dairy products and land although most of them agree on the existence of gender differences in access and control of agricultural resources and the fact that gender disparity has a direct impact on household welfare thus a need to investigate the influence of access and control of land and dairy products by women and men on household welfare in Murang'a county, Kenya.

### **2.3 Influence of Access and Control of Resources on Household Welfare**

Household welfare can be defined through the use of pointers such as income, value of assets and household food provision, quality of health and education (Mwankemwa, 2004). Provision of quality household welfare is the responsibility of men and women at the household level. The provision of quality welfare is mainly dependent on use, control of benefits, opportunities, resources and profits that the society has to offer for both women and men.

An important example to action is evident through the Government of Mexico in 1997 when it used the findings of a household survey on properties entrusted on women for child welfare in the planning and execution of conditional cash transfer program. The findings showed that the program improved the enrollment for girls in secondary education and positively impacted on child wellbeing and sustenance, learning fulfillment, and continuous incomes of the underprivileged (Skoufias, 2001). In addition, Hallman (2003) reported that increasing women's user rights to resources and reducing the gender variations in resource utilization and distribution would directly enhance women's welfare by minimizing their susceptibility to starvation and hunger and improving their wellbeing, self- being, and independence ensuing into upgraded benefits for a variety of development pointers not only for themselves but also for their household and communities. Further, studies have shown that enhancing women's decision making rights to productive resources results into an advancement into a variety of significant development end results for the families, including food safety and security, child nourishment and learning, as well as women's own welfare and empowerment (Kabeer, 2010; Quisumbing, 2003; World Bank 2001).

In Bangladesh, better health benefits are associated with an increased allocation of resources to women (Hallman 2003). A study by Smith and Haddad (2000), found that increase in women's literacy level led to a reduction in child undernourishment by 43%. In addition, research on gender differences in economic sectors such as employment, politics, education, job occupation and financial opportunities revealed that gender variations in learning and education decreases the GNP, consequently decreasing the development, and escalating the hunger levels at the community level (Kabeer, 2010).

Studies have demonstrated that the greater the access to resources and resource possession by women, the higher is their empowerment. This empowerment consequently increases the provision of welfare at the household level. Thus, user rights to resources indicate that people and communities are in a position to utilize them for individual and family benefits. Additionally, access to resources gives people the capability to sustain themselves because resources are agents of power to make decisions and a way to maintain the society (Valdivia and Gilles, 2001 Quisumbing and Maluccio 2003). On the other hand, the level of empowerment is constrained due to poor access to new technical knowhow and skills to deal with problems associated with agricultural resource use and utilization (Karen, 2013). It is also anticipated that the enhanced women empowerment and inclusion will result into greater advancement of health services, sustenance and reduction in economic deficiency for all in the community (Quisumbing, 2003).

A study carried out in Tanzania by Bayer et al. (2006) found that families utilized the revenue accruing from the sale of milk and its products to obtain an extra piece of land,

construct better houses and cowsheds, establish small businesses, pay school fees for their children in colleges and secondary schools, and advance the dairy production. Another study by Lwelamira, et al. (2010) in Kayunga Tanzania on food security through the measurement of the number of meals taken by a family in a day noted that 90% of the sampled families had two meals in a day.

Galiè et al. (2015) found that household welfare was influenced by who had control and access to household resources. The men respondents from Wami Dakawa in Tanzania stated that in case of the death of a young family male household head, the management and decision making in relation to the household livestock would be passed on to one of the male family member. Further, it was common that women could not own animals and that even if they owned the animals, they would be required to consult with their husbands in case they wanted to sell them out of respect. Although as women grow older they could decide to sell the livestock and later inform their husbands (Galiè et al., 2015). In addition, the study noted that marital status of the household heads influences the control, and management of livestock in Tanzania in that a widower reported that she feels as the owner of the household animals because she was in charge of the whole process of livestock production, including selling the animals and milk and enjoying the benefits accrued from dairy production.

Further studies have indicated that variances among men and women in ownership of assets may result into unproductive administration, and therefore resulting into negative effects on provision of wellbeing and enough food for the households (Quisumbing, 2003). It is also good to note that deliberations in pursuing rural livelihoods

encompasses access, control, and/or own property and resources (Valdivia and Gilles, 2001). Unfortunately, members of households lack equal rights to decision making over the available properties and opportunities. Therefore, development will have significant and positive impacts on the targeted group be it men or women.

In different countries of the world, resource ownership and control influences the negotiating tactics between men and women at the household level. In South Africa and Bangladesh, access and control to resources by women increases provision on education, but in Ethiopia, men's resources have a similar effect (Quisumbing and Maluccio 2003). In addition, Fafchamps, et al. (2009) noted that household bargaining power may affect some features of household wellbeing. It was also noted that in Ethiopia, women's empowerment benefits child nourishment and schooling.

A study done in Khartoum, Sudan by Elniema et al. (2014) on "*The contribution of dairying to household welfare of the small commercial dairy keepers*" reported that on average, the households earned approximately 322.5 Sudanese Pound (SDG) a year per cow. The study further revealed that under the existing farming practices, the influence of dairy farming to rural poor in Khartoum based on the general growth and development indicators through revenue generation and creation of job opportunities, food sufficiency, resource amassing and enhancement of people's hygiene and nourishment was adequate.

In 2007, Kenya produced 3.8 billion litres of milk and in 2011 the production increased to 5 billion litres for household consumption and sale to generate income (MoLD, 2008). In addition, a study carried out in the coastal parts of Kenya established that for

every cow owned, there was increased household income by fifty-three percent compared with non-dairy farming households (Nicholson et al, 2004). Therefore, dairy farming plays a significant role in the provision of adequate food, job creation, revenue collection and advancement of life for the livestock keepers, business people, manufacturers and all stakeholders involved in dairy production (Muia et al. 2011).

The reviewed literature shows that dairy farming as well as land is fundamental in the provision of household welfare. Studies have been done on access and control of resources by men and women though very few studies have focused on the influence of gendered access and control of land and dairy products on household welfare thus the need for this study which was carried out in Murang'a County.

#### **2.4 Perceptions on Access and Control of resources.**

Men and women hold different perceptions about who should access or control resources at all levels in the society. It is very unfortunate that this perception is mainly discriminative against women. These perceptions are found to have been influenced and perpetuated by the gender stereotypes that the society has against either male or female. Yount et al. (2016) noted that masculinity is a form of traditional perceptions that reinforces and perpetuates women's inequality thus discriminating them and making married women's employment, education, income, sexuality and resources to be under their husbands control. Galiè et al. (2015) found that women felt that their control of benefits and resources from livestock keeping enhanced their social standing, self-esteem, and appreciation from the public which in turn assured them a sense of ownership and control.

Galiè et al. (2015) reported that a young man from Wami Sokoine in Tanzania, indicated that women are ordinarily fragile therefore if they are given ownership of properties and possessions they will not fulfil the food requirements of the family. In addition, the traditional role of men as food provider was also used to justify men's ownership to resources. In particular, one male respondent quoted a general law that defined woman's responsibilities as care givers and men's role as the bread weaner. However, study established that only education could enable women in taking care of themselves and their children and at the same time be good managers over the household resources (Galiè et al., 2015).

Rabiul et al. (2018) noted that regardless of men's age, educational and occupational backgrounds they expressed distress of losing male authority, a feeling of loss of masculinity power and panic and a feeling that they will be controlled by women as a result of increased women autonomy and economic independence. In addition, men feared that women will become economically independent to an extent that they would lose control over them. They also feared losing their marital authority and being harassed by women. Therefore, they strongly opposed the principles of gender equality in all spheres arguing that it was interfering with the traditional beliefs and norms.

In Wami Dakawa in Tanzania, men reported that women should not own or control animals, because women are responsible of all the household chores and that they usually get pregnant thus limiting their capability to handle animals. In addition, another man stated that daughters are not capable of taking care of livestock because they might get married thus abandoning the livestock (Galiè et al., 2015). In addition, they found

that animals were jointly owned by men and women, however, significant decisions that could result into major variations in livestock production such as sale of cattle were made by men because they were considered more knowledgeable compared to women. On the contrary, a pastor from the same village felt that some of the bereaved women in the community had been able to manage their household animals and other resources prudently and therefore he concluded that women are good managers thus they can be able to manage even large livestock (Galiè et al., 2015).

Rabiul et al. (2018) found that men from all age groups alleged that encouraging women involvement in development would lead to increased family conflicts and problems. They felt that women equal participation in development is a hazard to the existing harmony and peace in the patriarchal families. On the contrary, some young educated men were of the opinion that women involvement in development would lead into increased household income which would result into better livelihood for the family. In addition, it was felt that women involvement in development would result into better healthcare services for the household, which emphasized that women's contribution in vaccination and maternal healthcare could lead to improved family health as a whole.

In a village of Lwandai in Tanzania, Galiè et al. (2015) found that possession and control of livestock and land was associated with the traditional customs that favored men at the expense of women. Religious beliefs were also identified as a factor that influence ownership to land and livestock. In Tanzania, one man quoted the Bible verse that alludes that men are the head of the family to justify men's ownership of resources. Another man quoted the Bible to demonstrate that the household heads are men and

therefore women are not allowed to make major decisions without consulting them. Reviewed literature showed that men and women perceive access and control over resources by gender differently.

### **2.5 Strategies to Enhance Gendered Access and Control of Resources for Improved Household Welfare**

A number of instruments at international, regional and local level have been established to address the gender disparities that exist in resource distribution and opportunities. Such framework includes the Convention on Elimination of All Forms of Discrimination (1979), the Beijing Declaration and Platform of Action (1995), the 2003 Protocol to African Charter on Human and People's Rights, and the 2004 Solemn Declaration on Gender Equality. They were established to protect, uphold human dignity and advance fairness and justice in use, and control of resources including land. Following the ratification of these instruments, many countries in Africa have taken different strategies to achieve the goals of safeguarding gender parity. Such strategies entail constitutional amendments and review of existing laws, land reforms amendments and land subdivision policies and plans to be more gender-sensitive and responsive.

#### **a) Review and enforcement of existing laws and policies**

United Nations Children's Fund report stressed the significance of legislative reforms in gender equality and economic independence of women and girls and the protection of their rights in the society (UNICEF, 2006). Nevertheless, the United Nations (2003) reported that the legislative reforms in many African countries are challenged by a number of major bottlenecks, firstly there is illiteracy which is very high coupled with ignorance of citizens about the important duties and responsibilities that women

undertake in the socio-economic growth process of the country. Secondly, the inherent traditional ideologies and obsolete norms and beliefs that hinder female gender from being involved in the economic growth process of the country. Thirdly, there is lack of suitable expertise and technology to reduce the routine duties of women at the family level and finally, there is scarcity of competent women development managers to assist in building women's capacity.

In Africa, the Charter on Human and Peoples' Rights (ACHPR) commonly referred to as the Banjul Charter focuses on the rights of women in relation to property use, control and ownership. Article 21 gives requirements for women rights to own and inherit family possessions. Therefore, similar to global human rights mechanisms, the African Charter recognizes the significance of rights of women to access, control and own resources. Nevertheless, Davis (2012) reported that it is only 36 out of 54 members of the African Union (AU) have "consented" to the agreement. To make it worse, those countries which have ratified the Banjul protocol are faced with challenges of conceptualizing, executing and comprehending its goals of fairness and justice in access and control of property by both men and women (Davis, 2012).

In Africa, a number of activities have been done to help small scale farmers and advance rights of women within the agricultural sector (Duncan and Brants, 2004; Uganda Ministry of Food and Agriculture 2007). The Economic Commission for Africa and African Development Bank under the Africa Union umbrella formulated the Land Policy guidelines in 2006 to guide the agenda and strategies for land in Africa. The policy set out the expectations and indicators to provide direction on monitoring and

evaluation of achievements in restructuring with the aim of addressing connected challenges like gender variations in land possession and land subdivisions to guarantee women land ownership and security.

In Uganda, Women in Agricultural Development Directorate (WADD) are dedicating and focusing on the needs of women farmers. In addition, to solve gender imbalances in the agricultural division, the Gender in Agriculture Development Strategy II was established. Subsequently, there are many policies which are defined by the government including gender mainstreaming in all agricultural activities. Women lose their property control and ownership status after marriage in spite of the existing constitutional provisions (Bikaako and Ssenkumba, 2006). Although there have been a lot of efforts put in place to promote rights of women to own and control properties, their execution has been sluggish and irregular with some regions showing signs of progress while others lag behind (Davis, 2012)

The Ugandan government on her part has provided for affirmative action and sensitization of her staff as actions to advance gender parity and fairness in access and control of agricultural income and benefits (Uganda Ministry of Food and Agriculture, 2007). However, there is need to emphasize that some of the intervention measures put in place such as the introduction of stall fed cattle to increase the production of milk and subsequently farmer's revenue have led to overburdening women without increasing their wages and benefits (Ochola, 2002).

The fight against women discrimination and gender equality requires inclusivity of all people. Therefore, there is a need to bring men on board in the amendment of policies

by encouraging them through incentives and if possible through monetary reward. In Kenya, the discussions which have been going on are on the issues of restructuring biased birthright laws (Drechsler et al., 2008). Reports by ICRW (2014) and IWHRC (2009) on the rights of women to possessions noted that poor execution and administration of the law are hindrances facing Kenya as far as advancement of women's rights to possessions are concerned. UN-Habitat report (2006) also revealed that poor implementation of statutory laws is a major deterrent to advancing the use and control of assets by women.

Karen (2013) in her study "*Challenges facing women in the zero-grazing livestock production system in Kenya*" observed that members had high expectation that the implementation of the Kenya Constitution 2010 especially Articles 27(3), 45(3), 59(2) (c) and 60 (1) (f) would in practice supersede customary laws, cultural and customary beliefs and practices related to land that currently prevail and in its place initiate the change process that could enhance gender parity and justice in relation to women's access, control and ownership of all productive resources in Kenya including land and dairy products.

#### **b) Women economic empowerment**

A study on dairy farming in Arumeru District in Tanzania by Kimaro et al. (2013) recommended strategies for empowering women through integration of gender parity and fairness principles in the development process for women's economic development. This is the key aspect in enhancing women financial independence and consequently assists in addressing the rampant poverty levels of women living in rural areas. Additionally, the Ethiopian government has shown its commitment to women

empowerment by putting in place measures such as the formation of the Women's Affairs Office and the establishment of a nationwide policy targeting women aimed at permitting and preservation of property rights of women, job placement and annuity (United Nations, 2003).

Kimaro et al. (2013) further recommended the following measures for enhancement of gender disparity in access and control of dairy products: failure of men to participate in dairy farming should be discouraged so as to reduce women's burden and increase the production level, continuity and eventually increase revenue for the family; all development stakeholders should pinpoint and support women as livestock managers, holders, manufacturers and consumers of dairy products while strengthening their capabilities and power to make decisions.

Bhatta (2001) in his study on gender mainstreaming described empowerment as a practice by which powerless community members recognizes their conditions and capabilities and join hands to access public goods and services for their own good and the benefit of those associated with them. In addition, the NEPAD (2007) report indicated that in Ethiopia, gender empowerment requires a consolidated financial, social and political policy measures to advance the conditions of members of the household. The report emphasized the importance of women economic empowerment on households' livelihood at the family level and world over. In addition, Olumakaiye and Ajayi (2006) study on "*Women's Empowerment for household food security*" reported that empowering women is fundamental in achieving food security in Africa. Further, Bhatta (2001) observed that improving access to productive resources by subsistence

farmers is the best ways of promoting sustainable human development which in turn enhances food security and family wellbeing (Bhatta 2001).

Additionally, Cherinet and Mulugeta (2003) study on “*Profile on gender relations in Ethiopia*” recommended the gender policy as a tool for the promotion of gender parity. This is aimed at institutionalizing the human rights of all including women and girls by coming up with suitable structures in all spheres including the government offices to formulate government policies and intervention measures which are more gender-responsive and socio-economic growth oriented.

**c) Awareness campaign on human rights**

Mogute (2015) in her study in Kisii County, Kenya found that majority (68.7%) of the respondents revealed that women's property rights could be enhanced through deliberate efforts geared towards creating awareness on women rights. Similarly, Kameri-Mbote (2007) and KHRC (2006) noted that most people in Kenya did not observe women's property rights because they were largely ignorant of their provisions. The KHRC report on women's equal ownership, access to and control over land and other properties indicated that affected women could demand for their property rights because they were not aware of them (KHRC, 2003).

With awareness creation, women would be aware of their statutory rights to control, own and inherit property. Ultimately, this will position women in a better place to fight for their rights when violated as argued by Kameri-Mbote (2007) in her documentation on women land rights and the environment this confirms that awareness on women's property rights would encourage gender sensitive attitudes and actions that could lead to

enhancement of women's rights to key resources in their community. In addition, international Women's Human Rights Center (2009) report identified lack of education and awareness of women's rights to property as a major setback to realizing women's property rights. This would ultimately enable women to bargain for their rights when violated (Kameri-Mbote, 2007).

## **2.6 Summary Gaps**

The reviewed literature shows that there exists a gendered access and control of agricultural resources in the society today. The reviewed literature further reveals that women are very important in eradicating hunger and promoting food security for the household and that dairy farming is key in elimination of poverty and food scarcity. However, the studies do not show the relationship between men and women's access and control of agricultural resources and the status of household welfare in the society. In addition, the influence of men and women's access and control of land and dairy products on household welfare in Murang'a County has not been explored. This is what informed the need for this study which focused on the gendered access and control of land and dairy products and their influence on household welfare in Murang'a County.

## **2.7 Theoretical Framework**

This study was guided by Marxist Feminism Theory (MFT) advanced by Friedrich Engels (1884) as well as the Women Empowerment Framework (WEF) advanced by Sarah Longwe (1994).

### **a. Marxist feminism theory**

The theory focuses on the social institutions of private property and capitalism with a focus on gender inequality and oppression emanating from gendered access and control of economic resources. The theorist argues that individual ownership of property promotes economic disparity in ownership, access and control of resources and derived benefits. The relationship ultimately creates domestic struggle between men and women especially in situations of scarce resources. Additionally, the economic inequality may influence the provision of basic necessities at household level.

Consequently, Marxist feminism identified types of gender roles that exist in any society which perpetuates and reinforces gender inequalities. Firstly, the productive roles result in creation of goods or provision of services which can translate into monetary gains. Secondly, the regenerative roles within the social sphere are concerned with maintenance or care work within the household. However, both scenarios may apply in many agricultural undertaking including livestock farming in terms of provision of labor and access/control of products.

More specifically, although both reproductive and productive roles are important in any society, men and women perform different roles based on the gendered division of labor. Consequently, as revealed in the literature review, the highest percentage of the unpaid labor is usually provided by women although they have less control of agricultural resources and benefits. This is particularly true with agricultural activities done around the household and which include dairy farming. The status may influence the provision of family welfare at the household level. In this respect, Marxist feminists

believe that barring women from decision making has resulted in male supremacy in control of both social and economic spheres thus expanding the gender gaps in agricultural production including land and dairy farming. It is in this respect that the study assumes that gendered access and control of land and dairy products may have a direct impact on the general family welfare especially centered on the provision of basic needs of life in Article 43 of Kenya constitution (2010) on Social and economic rights (health, food, education, shelter and water).

#### **b. Women empowerment framework**

The framework was developed by Sarah Longwe in 1994 to help planners in questioning the meaning of empowerment and equality in development activities, and in assessing the extent to which access and control of resources enhance empowerment. The framework defines women's empowerment as allowing women to be in control of their lives and participate fully and equally in the development process in order to promote their potential and have full control over the economic factors.

Longwe framework views women empowerment as a tool to emancipate people from poverty by giving them power to design their own lives. In the same concept, poverty is not brought by lack of economic productivity, but from inequalities arising from gender discrimination and biases which is represented through subjugation and misuse. The framework further recognizes the gender gap that emanates from lack or limited access and control of agricultural resources between men and women. Based on the above facts, Longwe's framework set the tone that gendered access and control of resources can result in increased empowerment. These can be depicted through the five different

levels of women empowerment that is welfare, access, conscientisation, participation and control which in turn may influence the provision of quality household's welfare.

Longwe framework argues that the degree to which the inequalities exist in any social and economic including agriculture defines the position of women of in the social economic ladder which translates into their capability to provide adequate welfare services and goods to the household. Of particular relevance to this study is the access and control of land and agricultural produce in improving household welfare. The framework emphasizes on analyzing gendered access and control of land and dairy products in relation to provision of household welfare.

## **2.8 Conceptual Framework**

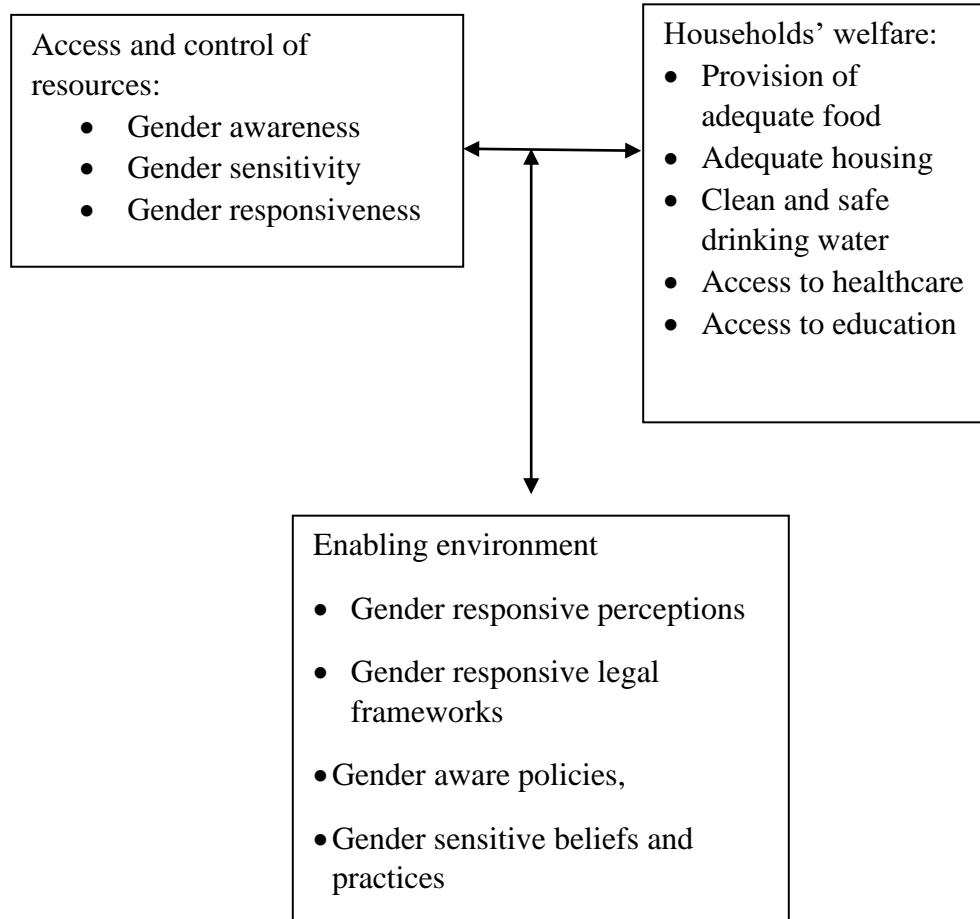
The major concept in this study is gendered access and control of resources which included land and dairy products. The concept was examined as it determines the status of household welfare in Murang'a County, Kenya. The study is therefore conceptualized in the light of three variables which includes independent, dependent and intervening variables as illustrated in Figure 2.1.

According to the Figure 2.1, the independent variables directly influence the dependent variables, on the other hand, the intervening variable determines the outcome either positively or negatively. This is aimed at ensuring gender parity and fairness in access and control of land and dairy products which influences household welfare specifically the provision of adequate food, housing, water, health and education. On the other hand, the enabling environment as an intervening variable may be realized in the form of gender responsive legal frameworks, policies and practices. It is important to note that

gender sensitive practices result from gender awareness. The long term outcome is fulfillment of economic and social rights as stipulated in Article 43 of the Kenya Constitution in the form of households attaining improved standards of health, housing, food security, clean and safe water as well as education.

### Independent Variables

### Dependent Variables



*Fig 2.1 Influence of gendered access and control of resources on household welfare*

## CHAPTER THREE: RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter presents a description of the methodological detail utilized in this study. Key areas highlighted comprised of the design of the study, study location, units of analysis, target population of the study, sampling procedures and sample size, data collection instruments, reliability and validity of the research instruments, data collection procedures, data analysis and ethical considerations.

### 3.2 Research Design

The study yielded both qualitative and quantitative data. It adopted a cross-sectional research design which employed mixed approaches based on two variables namely gendered access to and control of land and dairy products as well as household welfare. The advantage is that it provided a deep understanding of the problem under study namely influence of gendered access and control of land and dairy products on household welfare. Most importantly, the design allowed the use of interview schedules and guided questionnaires with the aim of generating data in fulfilment for the nature of the objectives that guided this study and related cross tabulation during the analyses.

### 3.3 Site of the Study

The study was carried out in Murang'a County, Kenya. As shown in the map of Kenya, (*Appendix 1*) the County is in the Central region of the Republic of Kenya, bordering Nyandarua to the West, Embu to the East, Nyeri to the North, Kiambu to the South and Machakos and Kirinyaga counties to the South-East and the North-East respectively. Murang'a County covers 0.4% of the total land mass in Kenya, over an

area of 2,558.82 km<sup>2</sup> in the Central part of Kenya between the latitudes 0034' and 0134' South and longitudes 3600 and 3700 East. Murang'a County is the North-East side of Nairobi approximately 85 kilometers. According to KNBS (Kenya National Bureau of Statistics) (GOK, 2015), Murang'a County has an aggregate population of 942,581 drawn from 255,696 households with a total of 239,196 cows. The County is divided into seven sub-counties which includes Kangema, Kiharu, Mathioya, Kigumo, Kandara, Maragua and Gatanga.

The County was selected firstly because it is suitable for dairy farming since it has two seasons of short and long rain with temperatures ranging between 21–35 degrees centigrade. Secondly, the county government of Murang'a since year 2014 has focused a great deal on dairy farming to the extent that the first County Governor (2013-2017) initiated a project dubbed "*one home one cow initiative*". Further, the county government has established Livestock Development Fund (LDF) and Livestock Input Grant Fund (LIGF) which aims at encouraging and promoting dairying for improved livelihoods and food security (Murang'a County Plan 2013-2017, January 2014). The county government has also since 2015 facilitated the construction of milk cooling plants in different towns in Murang'a County with the sole aim of enhancing dairy farming and motivating the farmers to scale up dairy production.

### **3.4 Unit of Analysis**

The study unit of analysis was all households practicing dairy farming in Murang'a County, Kenya. This was justified in that the study aimed at exploring gendered access and control of dairy products as well as land in their influence on household welfare.

### **3.5 Inclusion and Exclusion Criteria**

Inclusion criterion for study participants was not only the practice of dairy farming by the households but also having practiced dairy farming for the 3 years at the time of study and with a minimum of two dairy cows per household. Households not practicing dairy farming were excluded from the study.

### **3.6 Target Population**

The study population comprised all the seven sub counties in Murang'a County that is: Kangema, Kiharu, Mathioya, Kigumo, Kandara, Maragua and Gatanga (*Appendix 1*). The study population also comprised of the male and female headed households that engage in dairy farming. According to the County Government of Murang'a Livestock Department, Murang'a county has a total of two hundred and fifty-five thousand six hundred and ninety-six (255,696) households (KNBS, 2009). The study also targeted the following key informants: the three (3) Chiefs from the three locations, one Sub-county livestock production officers, one Sub-county agricultural officers, and one milk collection managers.

### **3.7 Sampling techniques and Sample size**

To select the study respondents, sampling was done in stages through the use of multi stage sampling procedure. This entailed sampling in levels by use of smaller sampling units at each level proportionally.

#### **3.7.1 Sampling Technique**

First, simple random sampling was used to select Kigumo Sub-County in Murang'a County out of the seven sub counties. The technique ensured that each sub county had an equal opportunity of being selected for the study. Secondly, Kigumo Sub County is

divided into three locations; all the three locations were selected for this study that is Kinyona, Kigumo and Muthithi Locations. Further, a list of the households practicing dairy farming in the three selected locations in Kigumo Sub-County was obtained from the Sub-County livestock production office. The lists showed that the total number of households which have been practicing dairy farming for three years and above and had two (2) cows and above from Kigumo Sub-County were fifteen thousand (15,000) with the specific number per location as shown in table 3.1.

### 3.7.2 Sample size

Since the target population of the study was 15,000 and therefore above 10,000 Fisher et al. (1991) formula for determining the sample size was used. Therefore, 50% was used since it is assumed that the target population has similar characteristics and the desired level of precision was at 0.05 levels. The desired level of confidence (Z) statistic is 1.96 as recommended by Fisher et al. (1991) as cited in Mugenda & Mugenda, (2012). Thus, the sample size was calculated as follows:

$$d = \frac{Z^2 pq}{a^2}$$

*Where:*

*d - Desired sample size*

*Z - Desired confidence level -1.96*

*a - Desired level of precision -0.05*

*p - Estimated proportion of the population with the characteristic being measured in percentage-50% equivalent to 0.5*

*q - 1-p*

$$n = \frac{(1.96)^2 (0.5) (1-0.5)}{(0.05)^2} = 384.16$$

$$n = 384.16$$

$n = 384$  is the desired sample size for the study.

The obtained sample of 384 was then increased by 15% to address the non-responses or recording and data analysis errors. From each Location a proportional sample of 3% was selected to a total of four hundred and forty-two (442) as the respondents of the study taking cognizant of Mugenda & Mugenda (2012) that the larger the samples size the smaller the sampling error as shown in table 3.1.

**Table 3.1: Number of households practicing dairy farming from the selected area of the study**

County	Sub county	Location	Total Household (target population)	Sample size
Murang'a County	Kigumo Sub County	Kigumo	5000	148
		Kinyona	7000	206
		Muthithi	3000	88
		<b>Total</b>	<b>15,000</b>	<b>442</b>

The key informants of the study comprised of all the chiefs' from the three locations of the study, one Sub- County Livestock production officer, one agricultural officers and one Milk Collection Manager.

### **3.8 Research Instruments**

While the study findings were generated through the use of secondary and primary data, the later was generated through the use of three instruments namely: an interview schedule for the household heads (*Appendix 2*), guided questionnaire for the key informants (*Appendix 3*) and an observation checklist (*Appendix 4*).

#### **i. Interview Schedule**

Interview schedule was utilized to collect data from household heads. The interview schedule was considered appropriate for this study because it allowed probing for responses from the household heads with varying degrees of flexibility. It also allowed an in-depth exploration of issues in relation to gendered access and control of land, dairy products and their influence on household welfare. Since some household heads in Murang'a County may have low level of education while others have none at all, an interview schedule made it possible for the illiterate and semi-illiterate household heads to participate in the study (Murang'a County Integrated Development Plan 2017-2022). Interviews also allowed the observation of non-verbal behavior of the respondents.

#### **ii. Guided questionnaires**

The guided questionnaire was used to collect data from the key informants. The guided questionnaire as an instrument of data collection was used because it facilitated the collection of large amount of information from key informants of the study within the shortest time possible. It also helped in that the key informants had a better understanding of the questions.

**iii. Observation Checklist.**

The observation during the data collection. The purpose was to confirm the information generated through interviews and questionnaires.

**3.9 Reliability and Validity of Research Instruments****a) Validity**

To ensure validity of the data collection instruments, they were pre-tested through a pilot study. The purpose was to establish their suitability in generating relevant data, based on the objectives of the study. The piloting was done in Kandara Sub-County, Murang'a County. Interview schedule was administered to ten (10) households, five (5) male headed households and five (5) female headed households. In addition, guided questionnaire was administered to two (2) community elders as key informants.

Finally, the collected data was sorted based on research objectives. The purpose was to identify any omissions and gaps in generating the expected data to address the research objectives and hypothesis. A revision of the instruments was then done in accordance with the findings in consultation with the university supervisors.

**b) Reliability**

To ensure reliability of the data collection instruments, the coefficient alpha  $\alpha$  was used (George and Mallery, 2003). The value of alpha ( $\alpha$ ) is expressed as a number between 0 and 1. This measure helped to determine the uniformity of the issues raised in the data collection instruments. Uniformity of the data collection instrument defines the magnitude to which all the issues in the test measures same idea or paradigms hence, interconnectedness of the items within the test. Therefore, the uniformity and

consistency of the instruments used for this study was determined before they were used to ensure validity.

This process helped in identifying any ambiguities, anomalies and gaps that may exist in the data collection instruments. The identified gaps were addressed accordingly and necessary modifications and alterations on data collection instruments was addressed with the guidance of the university supervisors and the corrections were effected appropriately to ensure reliability is achieved.

### **3.10 Data Collection Procedures**

After the approval of the research proposal and clearance for the field work from Kenyatta University Graduate School (*Appendix 5*), a research permit was sought from National Council of Science, Technology and Innovation (NACOSTI) for data collection (*Appendix 6*). Further, permission was sought from the County Commissioner and the County Director of Education, Murang'a County. The researcher was introduced to the Deputy County Commissioner and Deputy Director of Education, Kigumo Sub-County. The researcher further sought permission from the Assistant Sub County Commissioner in charge of the three locations in Kigumo Sub-County.

#### **a) Logistics for administration of Interviews:**

The researcher visited the household heads to organize on the logistics in terms of time and venue for the administration of interviews and recording of information where necessary. After booking the date and venue for conducting the interviews, the researcher then embarked in training the three Research Assistants (RAs) and preparation of the interview schedules. The RAs were taken through the training session

on issues related to integrity, honesty, accuracy, effective communication skills and ability to remain focused during the interview. Additionally, they were trained on how to approach the respondents and ask questions, how to observe confidentiality and elimination of personal opinions and prejudices while collecting data. The date, time and other logistics including recording of information was agreed upon. It was agreed that in cases where the designated household heads to be interviewed were not available, return visits would be arranged. In cases of absolute unavailability of designated household heads, replacements were done and the next person in the chain of family command and authority would be considered. The interviews were conducted from 1<sup>st</sup> August, 2018 to 31<sup>st</sup> October, 2018.

**b) Logistics for Administration of Guided Questionnaires:**

The researcher visited the key informants to arrange on the time and venue for the administration of guided questionnaires. After clarifying the objectives of the study to all the key informants, informed consent to participate in the study was sought. The guided questionnaires were administered in the offices of the key informants. The guided questionnaires were administered from 1<sup>st</sup> November, to 15<sup>th</sup> November, 2018 based on the agreements by the individual key informants.

**3.11 Data Analysis and Presentation**

As the study was mixed in methodology, qualitative and quantitative data was generated leading to use of mixed methods of analysis.

**a) Qualitative analysis:**

Qualitative data was generated through interviews, partly through questionnaires and observation checklists. This data was analyzed according to themes and patterns derived from the research objectives. The generated data was then coded to identify similarities across themes. The coding involved arranging the data in predetermined categories based on the research objectives. They are the themes that guided the presentation and discussions of the findings in the following chapter, where the presentation is in the form of narrative and verbatim quotations.

**b) Quantitative data**

The quantitative data was generated through questionnaires. The data was analyzed using mean, mode and median measures of central tendency as well as simple statistics. Further, Statistical Packages for Social Sciences (SPSS) version 25 and excel software were used. The data was then interpreted and tabulated by use of tables, frequencies, percentages and charts. The Chi-square analysis was calculated and used to test the hypothesis. The hypotheses were tested to a 95% level of confidence and 0.05 level of significance.

**3.12 Logistics and Ethical Considerations**

Before data collection was commenced, the household heads and the key informants were informed of the study objectives and other requirements and their informed consent to participate was sought (*Appendix 7*). Confidentiality was also affirmed to the household heads and the key informants with the assurance that generated data was not to be utilized for other purposes beyond academic. Permission to record the participants

verbatim during interviews and taking photographs for use during report writing was also sought. Each potential respondent was informed in advance that participation in this study was purely on voluntary basis. All respondents were treated with mutual respect, with measures put in place to protect their dignity and privacy.

## **CHAPTER FOUR: STUDY FINDINGS AND DISCUSSIONS**

### **4.1 Introduction**

This chapter enlists the study findings and discussions on the gendered access and control of land and dairy products and their influence on household welfare in Murang'a County, Kenya. The presentation in the chapter is guided by the study objectives as follows: status of access and control of land and various dairy products by women and men in Murang'a County; status of welfare in households practicing dairy farming; perception of men and women in regard to gendered access and control of land and dairy products; and suggested strategies to improve access and control of land and dairy products for enhanced household welfare in Murang'a County, Kenya.

The chapter however starts with a presentation on the analysis of demographic characteristics of the household heads who participated in the study. Whereas this was not one of the objectives guiding the study, the knowledge on the demographic characteristics of the household heads selected for this study helps in understanding the dynamics that to some extent may influence access and control of land and dairy products in Murang'a County as well as the status of welfare at the household level.

As highlighted in the preceding section on methodology, the study targeted 442 household heads selected from 15,000 households practicing dairy farming. The households were randomly selected from the three locations in Kigumo Sub-County in Murang'a County namely: Kigumo, Kinyona and Muthithi.

## **4.2 Demographic Characteristics of the Household Heads Who Participated in the Study**

The investigation of the demographic characteristics of the household heads focused on gender, marital status, number of children per household, the level of formal education of the household heads as well as monthly income per household, as presented.

### **a) Gender**

The findings revealed that out of the 438 households reached for the study, 66% (289) were male headed households while the female headed households were 34% (149).

### **b) Marital status**

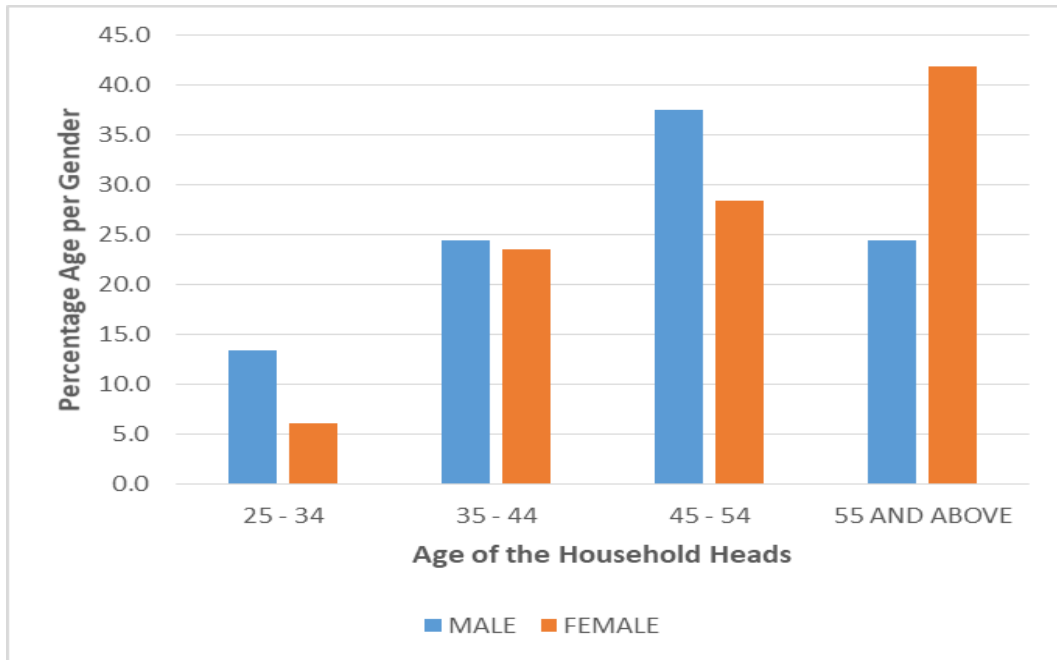
Data analysis revealed that on the whole, majority of the household heads were married at 68.7%. Out of this majority were male at 75.1% while the female household heads were 56.1%. Information generated from the respondents revealed that majority of married women heading the households was due to their spouses working and residing far away from home. Minority in both categories were single at 1.8% while other categories comprised the widowed, divorced and separated male and female household heads as shown in Table 4.1. This is in line with the findings by Mogute (2015) in her study on '*Patterns of women's property ownership and inheritance rights in Kisii County*' which revealed that while majority of household heads were married, a minority were single (3%). The findings in both studies can be associated not only to the patriarchal nature of the Kisii and Kikuyu communities but also the fact that in most communities including Kikuyu community people hold marriage with high regard, thus the less number of single men and women.

*Table 4.1 Distribution of household heads in terms of marital status*

Marital Status	Male HHS		Female HHS		Total	
	Freq	%	Freq	%	Freq	%
Married	217	75.1	84	56.1	301	68.7
Widowed	34	11.8	43	28.9	77	17.6
Divorced	16	5.5	6	4.0	22	5.1
Separated	17	5.8	13	8.7	30	6.8
Single	5	1.8	3	2.0	8	1.8
<b>Total</b>	<b>289</b>	<b>66</b>	<b>149</b>	<b>34</b>	<b>438</b>	<b>100</b>

**c) Age**

Figure 4.2 shows that majority of the male household heads were between 45-54 years at 37.7% while majority of female household heads belonged to the age bracket of 55 years and above at 42.3%. In both cases, minority were between 25-34 years of age. Further analysis revealed that of the 42.3% female household heads above 55 years, majority (41.5%) were either widowed/divorced /separated.



*Figure 4.1 Distribution of household heads by age.*

**d) Number of children per household**

Table 4.2 shows that majority in both male and female households had two (2) children at 38.8% for male headed households and 31.5% for female headed households. On the other hand, fewer households in both categories had 4 children and above per household at 17.0% for male headed household and 14.8% for female headed households. Further analysis confirmed the same in that both male and female households had an average of two (2) children per household.

**Table 4.2 Number of children per household**

No. of Child ren per HHS	Age bracket of the children										Total Male		Total Female	
	0 -5Yrs		6 - 14Yrs		15 - 18Yrs		19 - 26Yrs		Above 26 yrs.		Fre q	%	Fre q	%
1	8	6	10	4	19	5	18	13	4	7	59	20.4	35	23.5
2	20	4	18	3	42	9	29	22	3	9	112	38.8	47	31.5
3	10	3	12	6	30	7	10	18	7	11	69	23.8	45	30.2
4 & above	8	0	5	1	16	3	12	8	8	10	49	17	22	14.8
<b>Total</b>	<b>46</b>	<b>13</b>	<b>45</b>	<b>14</b>	<b>107</b>	<b>24</b>	<b>69</b>	<b>61</b>	<b>22</b>	<b>37</b>	<b>289</b>	<b>100</b>	<b>149</b>	<b>100</b>

Of interest in this study however is the revelation that both male and female headed households had an average of one (1) child in the school going age bracket of 6 to 26 years. This could have an implication on the household welfare due to the financial implications in support of education. This is in addition to other needs which include food, shelter and health given that they are still dependent on their parents for upkeep.

**e) Level of formal education**

Table 4.3 reveals that female household heads had relatively low rate of formal education compared to their male counterparts.

**Table 4.3 Distribution of household heads in terms of their education**

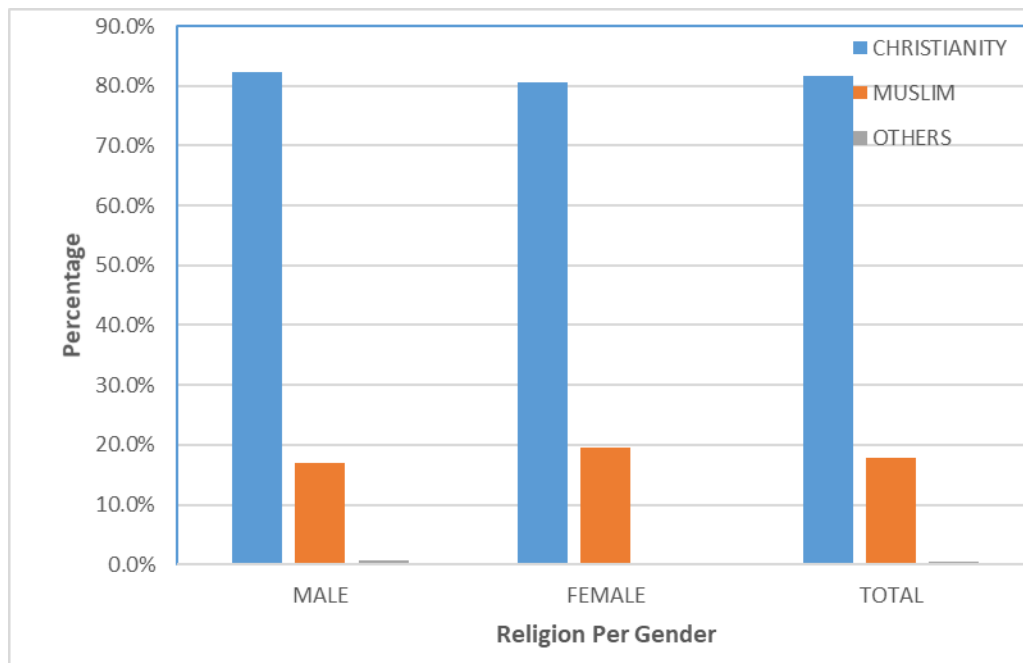
Education level of household heads	Male		Female		Total	
	Freq	%	Freq	%	Freq	%
No formal education	39	13.5	38	25.5	77	17.6
Primary level	53	18.3	59	39.6	112	25.6
Secondary level	111	38.4	27	18.1	138	31.5
Tertiary level	61	21.1	21	14.1	82	18.7
University level	25	8.6	4	2.7	29	6.6
<b>Total</b>	<b>289</b>	<b>66</b>	<b>149</b>	<b>34</b>	<b>438</b>	<b>100</b>

Further, the comparison of male and female household heads shows that majority of the female household heads had attained primary level of education at 39.6%, while majority of their male counterparts had attained secondary level of education at 38.4%. The same diversity was evident with the minority in both groups with the university level of education where the male household heads were at 8.6% compared to the female household heads at 2.7%. This is in concurrence with the findings by Mogute (2015) in her study on *'patterns of women's property ownership and inheritance rights in Kisii County'* where majority of the respondents with primary school education and below were female at 52% compared to male at 38.3%. This could be because the two studies were done in rural setting in Kisii and Murang'a Counties respectively. In addition, it is important to note that national statistics on literacy rates in Kenya

confirms the same at 74.9% for female and 81.1% for male (UNESCO Institute for Statistics, 2018). This could imply that the biggest percentage of women do not understand their rights in relation to access and control of land and dairy products.

#### f) Religion of the household heads

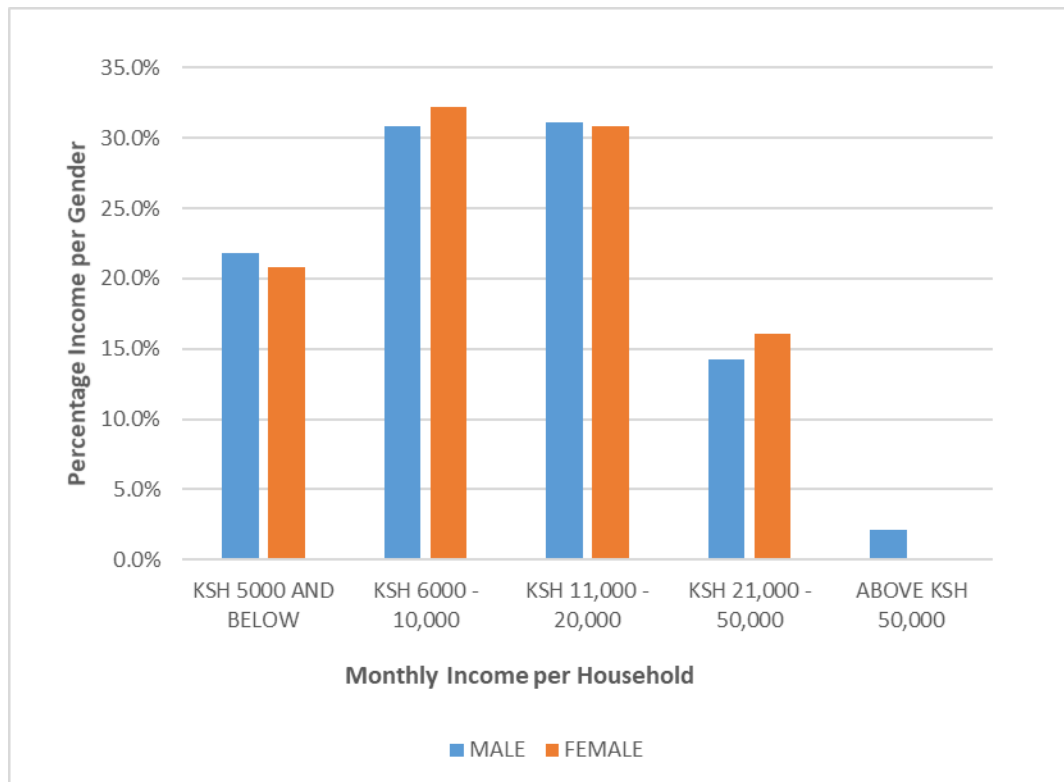
According to Figure 4.2, 81.7% of all households selected for the study from the three locations were Christians with male household heads constituting 82.4% and 80.5% of female household heads; the rest were mainly Muslims. According to a report by ICRW (2014) on ‘*Securing women’s land and property rights*’, religious doctrines may influence access and control of resources by men and women at the household level. Of interest in this study is the religious influence on gender relations which is mainly grounded on the male headship in a family as supported by the Holy books the Bible and the Koran.



**Figure 4.2 Distribution of household heads by religion per gender**

**g) Monthly income**

Figure 4.3 shows that male household heads had high monthly income compared to female household heads. Accordingly, majority of female household heads (32.2%) earned between Ksh 6,000 -10,000 per month as compared to male household heads whose majority (31.1%) earned between Ksh 11,000- 20,000 per month.



***Figure 4.3 Distribution of household heads by monthly income.***

The figure also reveals that 2.1% of the household heads exclusively male earned Ksh 50,000 and above. The findings concur with those of Njuki and Sanginga (2013) in a study on ‘*Women, livestock ownership and markets in Tanzania*’ which reported the financial ability of men being higher than that of women thus strengthening their ability to access and control resources. This can be attributed to the fact that majority of

women economically depend on men which can then reduce their capacity to provide household welfare.

### **4.3 Status of Access and Control of Land and Dairy Products by Women and Men in the selected households of Murang'a County, Kenya**

This section presents the findings and discussions in relation to the first objective of the study which was to determine the status of access and control of land and various dairy products by men and women in Murang'a County. This based on recognition that access and control of resources including land and dairy products influences economic development as well as household welfare as explained by the Marxist Feminist Theory. The presentation and discussions is in three subsections: firstly, the analysis of the dairy products within the selected households; secondly, gendered access to land and dairy products; and thirdly, gendered control of land and dairy products within the selected households.

#### **4.3.1 Analysis of the dairy products in male and female households selected for the study**

As shown in Table 4.4, all the male and female headed households owned milk, manure, calves and dairy cows. Biogas was however owned by selected households with a near equal proportion between male and female headed households.

*Table 4.4 Dairy products in households selected for the study per gender*

Dairy Products	Male HHS		Female HHS		TOTAL	
	Freq	%	Freq	%	Freq	%
Milk	289	100	149	100	<b>438</b>	<b>100</b>
Manure	289	100	149	100	<b>438</b>	<b>100</b>
Biogas	65	22.5	34	22.8	<b>99</b>	<b>22.6</b>
Calves	289	100	149	100	<b>438</b>	<b>100</b>
Dairy cows	289	100	149	100	<b>438</b>	<b>100</b>

Additional data gathered during the field study revealed interesting information about each of the products that can have a bearing on the status of household welfare as discussed below.

#### **a) Milk**

As shown in Table 4.4, all households selected for the study had milk as a dairy product. However, the milk production varied with some having as low as five (5) litres while others had over fifty (50) litres per day. The amount of milk produced depended on the number of dairy cows, the breed type and production per dairy cow. Milk was sold to neighbors who did not have dairy cows, Murang'a County Creameries (MCC), with a lesser portion being consumed at the households across the three locations. This therefore, implies that milk production brings additional income to the families, part of which could improve its welfare, in addition to improved diet. This was confirmed through the interviews. For example, one male household head from Kigumo location had this to say in an interview:

*“In my house the money collected from the sale of milk is mostly saved for food and payment of school fees.” (Male household head participant in an Interview on 8<sup>th</sup> August, 2018)*

The same was confirmed by another participant from Kinyona location who reported that:

*“Milk is my main source of income. I am able to pay the casual laborers who assist me with the farm work and also cater for the household bills” (Female household head in an Interview on 18<sup>th</sup> August, 2018)*

The participants of the study confirmed that milk production is the major reason behind dairy farming and that all the household heads work hard to increase its production on daily basis. This is in concurrence with a study carried out in Tanzania by Bayer and Kapunda (2006) who reported the importance of milk production at the family level. Families were found to utilize revenue accruing from the sale of milk and its products to buy an extra piece of land, construct better houses and cowsheds, establish small businesses, pay school fees for their children in colleges and secondary schools, and advance the dairy production.

#### **b) Manure**

Manure was found to be a valued product in dairy farming. However, the amount produced depended with the number of dairy cows within the household. Manure was used for subsistence as well as cash crop farming. The cow dung used as manure was also used to produce biogas. Whatever the use, the study established that manure has a strong link with enhanced welfare either through increased food and cash crop production or saving of income on the use of fuel as cooking energy in the selected households with biogas. The same was confirmed through observation during field

work and through the interviews where one female household head from Kinyona location reported:

*“.....I use manure to grow vegetable for household consumption and sale.....” (Female household head in an interview held on 19<sup>th</sup> September, 2019).*

### **c) Biogas**

As indicated in the previous subsection, the 22.6% of households with biogas were evenly spread across the three locations of study. Since biogas is generated from the cow dung, one common characteristic of the households with biogas is that they had more than three dairy cows, the purpose of which was to ensure enough production of cow dung to generate biogas. As observed in Table 4.4, there was no big variance between the percentage of the male headed households with biogas compared to female headed households, since the percentage was at 22.5% and 22.8% respectively. Further analysis revealed that those households with biogas had higher income from dairy production and the household heads had secondary school level of education and above. Biogas was used in cooking.

### **d) Calves**

Calves were found in all the households selected for the study. However, the number of calves was dependent on the number of dairy cows the households had. Some had as few as one calf and others with more than five calves at any given time. The study established that calves were mainly sold to generate income which both male and female households informed the study that money accrued was mostly used for hospital bills and school fees for the children. Other uses for the money was to improve on the

household shelter and purchase of water storage tanks. In support, one female household head from Kigumo location had this to say:

*“I sold my calves so that I could buy the materials used to construct this house. Were it not for the calves, my family would still be dwelling in a grass thatched house they used to live in.” (Female household head participant in an Interview held on 6<sup>th</sup> September, 2018)*

The Livestock Production Officer concurred with the sentiment by reporting that:

*“Calves are very important in enhancing the household welfare in that they are sold to cater for all the family emergencies.” (Livestock Production Officer in a guided questionnaire on 7<sup>th</sup> November, 2018).*

#### **e) Dairy cows**

All the households selected for the study from the three locations had dairy cows, this being the reason for selection. The number varied between 2 and 10 per household. Collaborated information from the study respondents alluded to the fact that dairy cows were highly valued for milk production and were rarely sold for meat. All households therefore, strived to feed and protect them from diseases purposely to increase milk production and calves. This is how the dairy cows were found to have a direct link with improved household welfare as confirmed by one male household head in an interview in Kinyona location who had this to say:

*“I have six dairy cows and currently each has borne one calf. Although the calves are still very young for a good sale, I am able to get 50 litres of milk per day, of which 15 litres is sold to my neighbors while the remainder is delivered to the Murang’a County Creameries.” (Male household head participant in an Interview held on 16<sup>th</sup> October, 2018)*

#### **4.3.2 Status of access to land and dairy products**

This subsection presents analysis of access to land and dairy products as discussed.

**Table 4.5 Status of access to land and dairy products**

<b>Resources</b>	<b>Male and Female HHS Access</b>	<b>Male and Female Partners Access</b>	<b>Male</b>			<b>Female</b>		
			<b>Chi-square</b>	<b>df</b>	<b>P-Value</b>	<b>Chi-square</b>	<b>df</b>	<b>P-Value</b>
<b>Land</b>	100%	100%	11.8	1	0.0	16.9	1	0.0
<b>Dairy products</b>	100%	100%	46.9	1	0.0	44.8	1	0.0

**a) Gendered access to land**

As would be recalled from chapter one of this study, the inclusion of the land as a factor of analysis for gendered access and control of land and their influence on household welfare is because of its importance as a means of production in agriculture. All the male and female heads who participated in the study across the three selected locations had access to their land. In addition, all male household heads who participated in the study reported that their female partners (wives) had access to land in the sense that they were allowed to utilize it in support and enhancement of dairy production in the household. The support was in form of growing fodder crops and construction of cowshed and calf pens to maximize dairy production.

Further, to establish the status of access to land by male and female heads who participated in the study the null hypothesis ( $H_{01}$ ) was tested. It was tested to establish whether there was a relationship between women and men access to land and household welfare. The hypothesis was tested to a 95% level of confidence and 0.05 level of significance. The results yielded a Chi-Square analysis output of  $X^2 = 11.8$  for women

and  $X^2 = 16.9$  for men with a P-value of 0.0 in both cases which means that there was a relationship between men and women access to land and household welfare.

### **b) Gendered access to dairy products**

As analyzed in previous subsection (4.2.1), the dairy products identified in the households selected for the study from the three locations were milk, manure, biogas, calves and dairy cows. The gendered access of each is as discussed.

#### **i. Gendered access to milk**

All male and female household heads selected for the study across the three locations had access to milk. Access to milk entailed milking, selling and accessing the income generated from the sale of milk. The study established that milking and selling was done interchangeably by both men and women from the male headed households. However, it was observed that married female household heads did not access the income from the milk sold to Murang'a County Creameries (MCC) because the money was paid directly to the bank accounts of their husbands. However, they accessed income from the milk sold to neighbors who did not have dairy cows. On the other hand, the widowed, single and divorced female household heads reported that they are able to access all the income generated from the sale of milk to MCC and to the neighbors. This was found to have a positive influence on the household welfare. This was supported by one married female household head from Kigumo location who lamented that:

*“Since the introduction of payment through the banks, most of us are left out during payment because men secretly visit the bank and withdraw the money. This money is spent on cheap liquor thus not benefiting the family.” (Female household head in an Interview held on 30<sup>th</sup> August, 2018)*

## ii. Gendered access to manure

The study revealed that both male and female household heads selected for the study across the three locations had access to manure. Manure was mainly used for subsistence and cash crop farming depending on who accessed it in terms of gender. It was reported that male household heads prioritized use of manure on cash crops while female household heads prioritized its use on subsistence farming. Whether used on cash or food crops production, manure as a dairy product was found to have some influence on household welfare especially food production at the family level. The study found that both married and unmarried female household heads were able to use manure although married women were required to consult their male partners before use. This was supported by one female household head from Muthithi location who had this to say:

*“Through the use of manure from the dairy cows, my kitchen garden can produce enough vegetables for consumption at the household level and the surplus is sold in the local market.” (Female household head in an Interview held on 15<sup>th</sup> September, 2018).*

These findings concur with Galiè et al., 2015 study on *‘Exploring gender perceptions of resource ownership and their implications for food security among rural livestock owners in Tanzania, Ethiopia, and Nicaragua’* which reported that livestock manure was used to improve and increase the vegetable yield for either household consumption or sale by women and men. This can be associated with the fact that both studies were done in rural areas where dairy farming is mainly practiced. In addition, the manure collected from the dairy cows is mainly used in production of cash and food crops for household consumption and the surplus is sold in the local market. This implies that

increase or decrease in the number of dairy cows per household determines the amount of manure produced which in turn influences the food production at the household level.

### **iii. Access to Biogas**

The finding revealed that both men and women from the selected households which were found to have biogas as a dairy product were able to access it. Access to biogas was mainly through its use in cooking and in few instances for lighting the homestead. It is important to note that only three households were found to use biogas for lighting. It was observed that access to biogas was mainly by women because of their involvement in food preparation and cooking. Further it was established that access to biogas saved on fuel thus it had a direct influence on household welfare. This was supported by one female household head from Muthithi location who had this to say:

*“I use biogas for cooking. This has really made my cooking efficient, fast and hygienic.” (Female household head in an Interview held on 18<sup>th</sup> August, 2018).*

### **iv. Access to calves**

The finding revealed that all the male and female household heads selected for the study from the three locations had access to calves as shown in Table 4.5. Further the study established that even the female partners of the male household head selected for the study from the three locations had access to calves. On the other hand, the married female household heads reported that their male partners also support in taking care of the calves where possible. This was reported by one male household head from Kinyona location who had this to say:

*“I ensure all my calves have good calf pens although I have delegated to my wife the duty of ensuring the calves are fed and the calf pens are clean and habitable.” (Male household head in an Interview held on 10<sup>th</sup> August, 2018).*

In addition, one married female household head from Kigumo location reported:

*“My husband assists me in deworming the calves when he is around although most of the time he is usually not around therefore I do it myself.” (Female household head in an Interview held on 10<sup>th</sup> September 2018).*

This concurs with the study finding by Aregu (2014) on ‘*Resilience of communal grasslands in Ethiopia Highlands, integrating gender and social learning*’, that livestock management activities such as feeding the animal, watering and cleaning the pen remains to be women’s role mainly under mixed crop livestock system. This implies that maintenance and feeding of calves is mainly by women because they are mainly at home although their sale is mainly men thus women are able to access but they do not get direct benefit from them except the single, widowed, separated and divorced.

#### **v. Access to dairy cows**

The finding revealed that all the male and female household heads selected for the study from the three locations had access to dairy cows. Access to dairy cows entailed access to its products such as milk, manure, biogas and calves which as discussed in the previous section, all household heads were able to access. The role of dairy cows is also clear based on the previous discussion that all the dairy products have a very significant influence on household welfare thus by extension dairy cows have a great influence on household welfare. This was reported by one married female household head from Muthithi location who had this to say:

*“I cannot engage the services of a veterinary officer without consulting my husband. In most cases he is the one who decides when the dairy cows need these services and where to get them from.” (Female household head in an interview held on 10<sup>th</sup> October, 2018).*

This is in agreement with the finding by Galiè et al. (2015) on *‘Exploring gender perceptions of resource ownership and their implications for food security among rural livestock owners in Tanzania, Ethiopia, and Nicaragua* that the animals were jointly owned by men and women. However, significant decisions that could result into major variations in livestock production such as sale of cattle, were made by men because they were considered more knowledgeable compared to women.

To establish the influence of men and women’s access to dairy products on household welfare, a Chi-square analysis was calculated and used to test the null hypothesis ( $H_{02}$ ). The hypothesis was tested to a 95% level of confidence and 0.05 level of significance. The Chi-square analysis output of  $X^2 = 46.9$  for women and  $X^2 = 44.8$  for men with a P-value of 0.0 in both cases revealed that there is a relationship between women and men’s access to dairy products and household welfare.

#### **4.3.3 Status of control over land and dairy products**

As shown in Table 4.6, all the male household heads selected for the study from the three locations had control over land and all the dairy products. On the other hand, the study findings revealed that very few female household heads had control over land and dairy products.

**Table 4.6 Status of control of land and dairy products**

Resources	Control Over Land and Dairy Products								Null Hypothesis Testing	Gender	Chi-Square	df	P-Value
	Male Household Heads				Female Household Heads								
	Male HHS		Female Partner		Female HHS		Male Partner						
Freq	%	Freq	%	Freq	%	Freq	%						
Land	298	100	0	0	60	40.3	89	59.7	Male	28.6	1	0	
Milk	250	83.9	48	16.1	90	60.4	59	39.6	Female	19	1	0	
Manure	200	67.1	98	32.9	102	68.5	47	31.5	Male	13.4	1	0	
Biogas	45	69.2	20	30.8	34	100	0	0					
Calves	298	100	0	0	65	43.6	84	56.4	Female	46.1	1	0	
Dairy cows	298	100	0	0	65	43.6	84	56.4					

Further information generated and analyzed revealed implications of control over land and dairy products on household welfare as discussed.

#### **a. Gendered control over land**

The study established that control of land implied either men or women would decide where the cowshed and calf pen would be constructed and the portion of land to be used for planting fodder crops. The finding revealed that land on which the dairy production was being practiced was either family land registered in the name of the male except for the single, divorced and separated female household heads whose land was mainly registered in their fathers' name or in the names of other male relatives or ancestral land which was under the custodian of the male family members. Despite the fact that the land was not mainly registered in the names of the female members of the society, the

single, widowed, separated and divorced male household heads had more autonomy in relation to its use. Therefore, the study established that where women controlled land, a bigger portion of land was used to grow fodder crops compared to households where men controlled land.

As shown in Table 4.6, all the male household heads selected for the study from the three locations had control over land while very few (40.3%) female household heads who were either widowed, separated, single or divorced had control over land. Although it was reported that even among these groups of women, a few (10%) of them did not have control over land because it was controlled by their male relatives through proxy. This was reported by one widowed female household head from Muthithi location who had this to say:

*“My husband passed on four years ago leaving us with a piece of land which he had inherited from his father and this is where we live. However, his younger brother still has control over this piece of land such that I cannot make any decision on it without consulting him. In 2002, the proceeds from the sale of coffee declined and therefore most people around this area uprooted the coffee bushes and invested in planting dairy cow feeds. However, my brother-in-law prohibited me from uprooting my coffee bushes. I was left with no option but to abide by this decision.” (Female household head in an Interview held on 11<sup>th</sup> August, 2018).*

These finding concurs with a study by Kameri-Mbote (2002) on ‘*Land has its owners! Gender Issues in Land Tenure under Customary Law*’ which reported that majority of the land in Kenya is registered under the names of male household heads. The situation leaves women with limited access and control to the land since men make decision the land use.

To establish the relationship between gendered control of land and household welfare, a Chi-square analysis was calculated and used to test the hypothesis ( $H_{03}$ ). The hypothesis was tested to a 95% level of confidence and 0.05 level of significance. The Chi-Square analysis output of  $X^2 = 28.6$  for women and  $X^2 = 19.0$  for men with a P-value of 0.0 confirmed that there is a relationship between control over land and household welfare.

#### **b. Gendered control over dairy products**

The study established that control of various dairy products had varied influence on household welfare as discussed below.

##### **i) Gendered control of milk**

Control of milk entails making decisions on the amount of milk to be sold and the amount to be left at home for household consumption. It also entails deciding on how to use the income accrued from the sale of milk. The finding revealed that 83.9% of the male household heads selected for the study from the three locations had control over milk while the remainder 16.1% of the male household heads reported that control of milk was by their female partners (wives). On the other hand, 60.4% of the female household heads selected for this study from the three locations reported that they had control over milk as shown in Table 4.6. Out of 60.4% female household heads who had control over the milk, 43.6% were divorced, widowed, separated and single while 16.8% were the few married female household heads who had secondary level of education and above. The study established that in the households where milk was controlled by women, more milk was left at home for consumption which improved the dietary provision of the family compared to households where men were in control.

This was confirmed by one married female household head from Kinyona location who had this to say:

*“I milk twenty-five (25) litres every day. Out of this, twenty-three (23) litres are sold by my husband in the local market. I use the remaining two (2) litres to prepare tea for the family and feed the baby. However, my husband insists that the amount of milk delivered for sale to the Milk Collection Centre should not be reduced. In case the dairy cows reduce their milk production especially during the dry season, we reduce the milk consumed by the family so that the amount of milk delivered for sale does not decline. This means we are forced to take black tea and the child goes without milk.” (Female household head in an Interview held on 24<sup>th</sup> August, 2018).*

This is in line with a study by Rashid (2013) on ‘*Securing women’s land and property rights, a critical step to address HIV, violence and food security*’ which reported that in spite of the realization and acknowledgment of the need for gender equality in agricultural sector, women across the globe still face significant barriers related to accessibility and decision making over vital resources such as livestock, land, houses as well as finances.

Further, the study established that majority of the married female household heads did not have control over the milk because even if their husbands were not staying at home they controlled the sale of milk through proxy. However, they were found to have more autonomy in relation to the amount of milk to be consumed at the household level per day. This was confirmed by one married female household head from Kigumo location who reported that:

*“I am the one who decides on the amount of milk be sold and the amount to be consumed at home although all the money accrued from the sale of milk is paid to him.” (Female household head in an interview held on 17<sup>th</sup> October. 2018).*

**ii) Gendered control over manure.**

Control of manure involves deciding on how it will be used either in fodder crops for dairy cows, food or cash crops. It also entails deciding on how to use the income accrued from the sale of manure. The finding revealed that out of all the male household heads selected for the study across the three locations, 67.1% had control over manure as shown in Table 4.6. The remaining 32.9% of the selected male household heads reported that their female partners had control over manure. The study established that male household heads who were in control of manure mainly prioritized cash crops at the expense of food and fodder crops which had a negative influence on dairy production and by extension influenced the household income and welfare adversely. On the other hand, out of 68.5% of the female household heads who had control over manure, majority were either divorced, single, widowed or separated with very few married women. In these cases, the use of manure was mainly on food and fodder crops which led to enhanced dairy production and household welfare. The remaining 31.5% were the married female household heads whose male partners controlled the use of manure although not residing at home. In addition, 3% of the selected male household heads reported that other than using manure on cash crops, they also sell the remainder to their neighbors who do not have dairy cows. These finding were confirmed by one female household head from Muthithi location who had this to say:

*“I use manure on my vegetable garden and the remainder is used on maize and other food crops with the aim of ensuring that my family has enough food and the surplus is sold in the nearby market.” (Female household head in an interview held on 20<sup>th</sup> August, 2018).*

A male household head from Kinyona location also supported the sentiment by indicating that:

*“I have decided that manure from dairy cows should first be applied on the tea bushes before being applied on other crops. This increases tea production which in turn increases the revenue stream for the household thus increasing the amount of disposable income which can be used to enhance provision of household welfare.” (Female household head in an Interview held on 24<sup>th</sup> September, 2018).*

In addition, one widowed female household head from Kigumo location in support of the sentiment narrated that:

*“When my husband was alive, may the Lord rest his soul in eternal peace, he could not allow us to use manure on food crops and because of that we did not have enough food for the family. We used to spend a lot of money buying food for the family. And you know food from the market is never enough. However, nowadays I am able to distribute manure between the napier grass, maize and vegetable farm thus boosting the food production and enhancing food security for my family.” (Female household head in an interview held on 4<sup>th</sup> August, 2018).*

These findings support the report by KHRC (2003) on ‘*The double standards in regard to women’s property rights violation in Kenya*’ that despite the fact that rural women are the major food suppliers accounting for approximately 75%, they do not have control over the land and other economic resources that are necessary for maximum agricultural production and food security. Further, the study found that control of manure was influenced by the level of education of the household head in that in the household where male household heads was educated, they allowed their female partners to control manure. This was supported by one male household head from Kinyona location who had this to say:

*“I am a primary school teacher, I have left my wife to be in charge of manure and this has really boosted our food security because she is able to use it to grow vegetables and other food crops.” (Male household head in an interview held on 12<sup>th</sup> September, 2018).*

### **iii) Gendered control over biogas.**

Control of biogas entails making decisions to install or uninstall it at the household level. As discussed earlier in this report, biogas was found in 22.6% of the households selected for the study across the three locations as shown in Table 4.4. The findings revealed that out of all the male household heads with biogas, 69.2% had control over it compared to 30.8% who reported that their female partners control the biogas at the household level. On the other hand, all the female household heads (34) that had biogas had control over it as shown in Table 4.6. The study established that although access to biogas was mainly by women because it was used in cooking, the control of biogas was mainly by men through installation and maintenance in married male and female headed households. This was supported by one female household head from Kigumo location who had this to say:

*“I am happy my husband installed biogas because it makes cooking less cumbersome.” (Female household head in an Interview held on 22<sup>nd</sup> August, 2018).*

### **iv) Gendered control over calves**

Control of calves entails being able to sell the calves at will. The finding revealed that all the male household heads selected for the study from the three location had control over calves. On the other hand, only 43.6% of the female household heads selected for the study from the three locations had control over the calves who were either widowed, single, separated or divorced. All the married female household heads did not have control over the calves. This could be closely associated with Kikuyu patriarchal culture that dictates that all animals borne or brought in the homestead belong to the household

head who is mainly a man. This was supported by one male household head from Kinyona location who said:

*“In the Kikuyu culture, all domestic animals belong to the husband and the wife cannot sell a calf in the absence of the husband not unless he is dead or he has been consulted for authorization if a need arises in the family.” (Male household head in an interview held on 16<sup>th</sup> August, 2018)*

This is in line with the study findings by Tegegne and Mesay (2012) in their study on ‘An assessment of the role of women in agriculture in Southern Nations Nationality people region in Ethiopia’ which reported that regardless of the major contribution of women in livestock production and management, their capacity to make major decisions in relation to livestock remains insignificant because they do not have control over them.

#### **v) Gendered control of dairy cows**

The control over the dairy cows’ entails being able to sell the dairy cows when there is need. It also entails being able to control all the dairy products including milk, manure, biogas, calves and their benefits and income accruing from them. The finding revealed that all the male household heads selected for the study from the three locations had control over dairy cows. They reported that their female partners cannot make decisions in relation to sale of dairy cows without involving and consulting them. On the other hand, 43.6% of the female headed households selected for the study had control over the dairy cows although it was noted that they were either single, widowed, divorced or separated. This means that all the married female household heads selected for the study from the three locations did not have control over the dairy cows. The study established that all household animals including dairy cows belonged to the household head who

was mainly a man and that he was the one who decided when and how much to sell them, when the veterinary officer will offer the veterinary services and the breed line for his dairy cows. Further, the study established that the household heads were very clear that it is against the Kikuyu culture for a woman to sell a cow in the presence of the husband even if the man does not reside at home unless he is dead. This was reported by one elderly male household head from Muthithi location who said:

*“In Kikuyu culture, all domestic animals at the household belong to the man of the house. My wife has no problem with that because I allow her to feed the animals and milk them. She is also allowed to use some milk for household consumption although any revenue from the milk and any other products belong to me” (Male household head in an interview held on 24<sup>th</sup> September, 2018)*

This is in concurrence with FAO (2013) report on ‘*Gender equality and food security a case of women empowerment as a tool against hunger*’ which indicated that substantial gender differentials are observed not only on the use and control of the benefits accrued through dairy farming but also in terms of making important decisions on strain selection, choice of livestock types to keep and the reasons for keeping specific livestock type in specific households.

Further, to establish the relationship between women and men’s control of dairy products and household welfare, a Chi-square was used to test the hypothesis (H<sub>04</sub>). The hypothesis was tested to a 95% level of confidence and 0.05 level of significance. The Chi-square analysis output of  $X^2 = 13.4$  for women and  $X^2 = 46.1$  for men with a P-value of 0.0 on both cases revealed that there exists a relationship between women and men’s control of dairy products and household welfare.

#### **4.4 Status of Welfare in Households Practicing Dairy Farming in Murang'a County**

This section focuses on objective two of the study which aimed at establishing the status of welfare in households practicing dairy farming in Murang'a County, Kenya. The welfare was analyzed based on the five parameters adopted from the economic and social rights in Article 43 (a, b, c, d & f) of the Constitution of Kenya (2010) as follows: ability to access health services, acceptable housing; freedom from hunger; clean and safe water in adequate quantities; and access to education at primary, secondary and tertiary level. In assessing the influence of access and control of land and dairy products on household welfare, the study adopted Sarah Longwe's need to uplift the existing level of empowerment, and thus relied on the following indicators of adequacy and or accessibility for each of the five parameters:

- The adequacy of health services was based on the families' ability to access quality health services either from government or private health facilities.
- The adequacy of housing was based on the nature of the houses in terms of permanency (stone walled and iron sheet roofing),
- Food security was measured based on the number of meals per day where three meals per day was considered adequate.
- Adequacy of water was based on the ability to access piped clean water.
- Accessibility to education focused on the ability of the children of school going age to access education either from public or private schools, depending on their level of schooling at the time of study.

#### 4.4.1 Access to health services

To analyze accessibility to health services, the Likert scale of five levels was used with the lowest being total inability and the highest being total ability to access health services. Table 4.7 shows the analysis of the male and female households' ability to access health services. According to the table, only 35.0% of the male households and 25.5% of the female households selected for the study from the three locations were able to access health services.

*Table 4.7 Accessibility to health services per household*

Level of Health Care Services	Male Headed Household		Female Headed Household		Total	
	Freq	%	Freq	%	Freq	%
Total ability	52	18.0	10	6.7	62	14.2
Able	49	17.0	28	18.8	77	17.6
Somewhat able	82	28.3	47	31.5	129	29.5
Inability	61	21.1	45	30.2	106	24.2
Total inability	45	15.6	19	12.7	64	14.6
<b>Total</b>	<b>289</b>	<b>100</b>	<b>149</b>	<b>100</b>	<b>438</b>	<b>100</b>

The health services available to the study respondents from the three locations included Kigumo Level 4 Sub-District hospital, which offers preventive, curative and promotional health services. Other public health service providers included Muthithi, Kangari and Kamung'ang'a health centres; and Gatumbi, Kirere and Ngonda dispensaries which mainly offered curative health services. They were also able to access health services from private health services providers located at different local shopping centers and towns in the study area. In addition, 31.8% of male and female

household heads were able to access health services from health facilities outside the sub-county such as Murang'a, Maragua and Thika general hospitals while a few others sourced for health services from Nairobi.

Further, the study established those who reported that they are totally able to access health services at 18.0% for male and 6.7% for female household heads had attained tertiary and university level of education as discussed earlier in this report (Table 4.3). In addition, majority of them earned above KSH 20,000 per month from dairy farming as discussed in Fig 4.3 thus they could afford medical services from private hospitals within and outside Murang'a County. In support of this, one male household head from Kigumo location had this to say:

*“I earn Ksh 25,000 per month from dairy farming and therefore I am able to access quality health services within and outside this County. For me and my household, accessibility to quality health services is not a problem.” (Male household head in an interview held on 25<sup>th</sup> October, 2018)*

Further analysis revealed that majority (29.5%) of the male and female household heads selected for the study from the three locations felt that they were not sure on their ability to access health services. Further analysis revealed that 36.7% of male households and 42.9% of the female households from the three locations were not able to access health services. This is because they reported that they have either inability or total inability to access health services. This was supported by one female household head from Kinyona location who had this to say:

*In this village, we have been losing many people out of curable diseases such as malaria which can be treated if we have a hospital with the required testing and diagnostic facilities. On many occasions when you visit the public hospitals around, you are given prescriptions to buy drugs from the pharmacists. This means that if you do not have the money you will end up not*

*buying them thus resulting to death or incapacitation.” (Female household head in an interview held on 21<sup>th</sup> September, 2018).*

The above sentiments are in line with the KHRC (2003) on ‘*The double standards on women’s property rights violation in Kenya*’ report which provides that availability, affordability, suitability and quality of health services are some of the requirements to determine the achievement of the right to health of which these standards are yet to be achieved.

#### **4.4.2 Acceptable housing**

To establish the nature of the household shelter, the researcher used observation method to gather the information. The nature of the household shelter was categorized into three: temporary shelter (mud walled and grass thatched); semi permanent shelter (brick/timber/iroonsheet walled and iron sheet roof) and permanent shelter (stone walled and iron sheet/tiled roof). The findings revealed that 64.6% of the households lived in semi-permanent houses, 29.9% in permanent houses and 5.5% in temporary houses as shown in Table 4.8.

***Table 4.8 Nature of the household shelter per gender***

Nature of the Shelter	Male		Female		Total	
	Freq	%	Freq	%	Freq	%
Temporary	2	0.7	22	14.8	24	<b>5.5</b>
Semi-Permanent	191	66.1	92	61.7	283	<b>64.6</b>
Permanent	96	33.2	35	23.5	131	<b>29.9</b>
<b>Total</b>	<b>289</b>	<b>66.0</b>	<b>149</b>	<b>34.0</b>	<b>438</b>	<b>100.0</b>

In comparison, more male headed households than female headed households lived in permanent and semi-permanent houses at 33.2% and 23.5% respectively. The reverse was also true on those who lived in temporary houses with male households being at 0.7% (2 households) and female at 14.8% (24 households). This could be interpreted to mean poverty by extension and therefore, low status in the household welfare. This means that female headed households are deprived compared to their male counterparts. The same can be interpreted to be influenced by the differential access and control of land and dairy products. Further, the study established that majority (23.5%) of the female headed households selected for the study across the three locations who lived in permanent houses were those who earned Ksh. 11,000 and above per month as discussed earlier in this report. In addition, the study established that majority of the female household heads who lived in temporary houses earned below Ksh. 5,000 per month (Fig 4.3).

Further analysis revealed that 70.1% of the households lived in temporary and semi-permanent shelter, an indication that Murang'a County has not been able to assure the households of accessible and adequate household shelter as spelt out in Kenya Constitution (2010). This study concurs with the Economic and Social Rights Centre (2012) report that access to affordable and habitable housing is still a challenge in Kenya. This has been associated to the fact that there are no major changes in the housing sector that are directed towards improving access to adequate housing for the low income earners in Kenya.

#### 4.4.3 Adequate food per household

The household heads were requested to state how many meals their families took per day as a test of food sufficiency. The finding revealed that 93.4% of the male household heads and 83.9% of the female household heads selected for the study from the three locations had three meals per day, while 0.5% of the households' exclusively male household heads had one meal per day as shown in Table 4.9. This could be interpreted as not having adequate food for the household per day. It could also be associated with lack or limited access and control of land and dairy products by female partners of the male household heads.

**Table 4.9 Number of household meals per day by gender**

Availability of Adequate Food Per Gender														
No. of meals per day	Male				Female				Total				Sum Total	
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%	Freq	%
Once	0	0	2	0.7	0	0	0	0	0	0	2	0.5	2	0.5
Twice	0	0	20	6.9	0	0	24	16.1	0	0	44	10.0	44	10
Thrice	267	93.4	0	0	125	83.9	0	0	392	89.5	0	0	392	89.5
<b>Total</b>	<b>267</b>	<b>93.4</b>	<b>22</b>	<b>7.6</b>	<b>125</b>	<b>83.9</b>	<b>24</b>	<b>16.1</b>	<b>392</b>	<b>89.5</b>	<b>46</b>	<b>10.5</b>	<b>438</b>	<b>100</b>

The finding also revealed that 16.1% of the female headed households and 6.9% of male headed households selected for the study from the three locations had two (2) meals and below per day. This could be interpreted to mean that they were not able to provide adequate food for the household which is a sign of low economic status and thus inability to provide household welfare. This could be associated with having less than five dairy cows which produced less than 10 litres per day thus less income. In

addition, manure produced from these dairy cows were less thus not enough to be shared between fodder and food crop production for the household. Interestingly, majority of the households selected for the study from the three locations at 89.5% had three meals per day which is a standard measure of food adequacy at the household level. This was supported by the Chief Kinyona location in a guided questionnaire who reported that:

*“We have enough food in this location and most families are able to take three meals per day in adequate capacities. This can be attributed to high returns from dairy farming and use of manure from dairy cows for food production”*  
(Chief Kinyona location in a guided questionnaire on 29<sup>th</sup> November, 2018)

This outcome contradicts with the study findings by Lwelamira *et.al* (2010) in Kayanga Ward in Tanzania on ‘*Contribution of small scale dairy farming under zero-grazing in improving household welfare in Kayanga ward, Karagwe District, Tanzania*’ which noted that 90% of the sampled families had two meals in a day. This could be associated with the fact that Murang’a County is in an agro-ecological zone suitable for dairy farming and other agricultural production thus enhanced food provision.

In addition, the study established that majority of those who had two meals and below and thus considered as not sufficient, were those who were earning an income below Ksh 5,000 per month from dairy farming as shown in Fig 4.3. Majority of them did not have any formal education at 10.1% as shown in Table 4.3 yet they lived in temporary houses at 5.5% as shown in Table 4.9. Therefore, the study established that dairy farming is a major economic activity that influences the status of household food provision. This was supported by one male household head from Muthithi location who had this to say:

*“I earn very little from my two dairy cows because I do not have enough land to plant animal feeds thus their production is very low. As a result, I am not able to provide enough food for my family. I can only afford two meals per day. If I can expand dairy farming, I can be able to provide better life for my family.” (Male household head in an interview held on 27<sup>th</sup> September, 2018)*

This supports the FAO (2013) report on “*Gender equality and food security*” that dairy farming plays a very important role in food security as well as boosting the nutritional value for the household meals. Thus to enhance food security at the family level, there is necessity to advocate for gender equality in control of resources including land and dairy products.

#### **4.4.4 Clean and safe water in adequate quantities**

To measure the adequacy and safety of the drinking water for the household, the household heads were requested to indicate their sources of water for determination of whether it was safe and sufficient for their daily consumption. For this study, safety and sufficiency of water was measured by the availability of regular and stable source of water at the household level. The sources of water considered were piped, borehole, rivers and harvested water.

In comparison, a higher percentage of female headed households selected for the study from the three locations had piped water at 77.2% compared to 63.3% for male headed households as shown in Table 4.10. The only deviation was the percentage of households with boreholes where the male headed households were more at 19.4% compared to 16.1% of female household heads. The findings revealed that 68.0% of the households had piped water which was considered sufficient and safe for drinking for the household. The piped water was supplied by Murang’a Water Supply Company (MUWASCO). In addition, water was fetched from Irati and Maragua rivers as well as

Nyanyeni and Kangari streams. There were also a few wells at Karumwini, Githima and Iriguini. Interestingly, the study established that boreholes were mainly found in Muthithi location because it is mainly dry compared to Kigumo and Kinyona location.

**Table 4.10 Sources of water for the household**

Sources of Water	Male HHS		Female HHS		Total	
	Freq	%	Freq	%	Freq	%
Piped	183	63.3	115	77.2	<b>298</b>	<b>68.0</b>
Rivers	98	33.9	40	26.8	<b>138</b>	<b>31.5</b>
Borehole	56	19.4	24	16.1	<b>80</b>	<b>18.3</b>
Harvested water	177	61.2	102	68.5	<b>279</b>	<b>63.7</b>

*\*Multiple responses was allowed because there was a possibility of one household having more than one source of water*

Further analysis revealed that 32% of the households selected for the study from across the three locations did not have access to piped water which was considered adequate and safe thus they did not have adequate and safe drinking water. Availability or unavailability of adequate and safe drinking water was found to have direct influence on dairy production which in turn influenced the household welfare. It was clear that households with no stable sources of water was not able to have more dairy cows because they could not be able to fetch enough water for them. This was confirmed by one male household head from Kigumo location who had this to say:

*“Although I am an active member of Githiru water project, the piped water does not reach my household because of the hilly terrain and low pressure. We rely on rivers and harvested water which is not clean and safe for drinking as well as adequate for animals and domestic consumption.” (Male household head in an interview held on 18<sup>th</sup> September, 2018)*

Another male household head from Muthithi location had this to say:

*“I am able to keep two cows now because our village does not have stable source of water...” (Male household head in an interview held on 19<sup>th</sup> October, 2018).*

In addition, access to safe and adequate drinking water was found to be influenced by the level of income per month of the household heads, whereby majority of the households with piped water earned ksh 11,000 and above because they were able to pay the water connection fee and monthly water bills. This implies that dairy production was key for accessibility and affordability of adequate and safe drinking water thus enhanced household welfare.

#### **4.4.5 Access to quality education**

To measure accessibility to education in the study area, the household heads were requested to state whether their children were able to access basic and higher education as desired. The Table 4.11 reveals that children from male headed households that accessed education at all levels as desired were slightly higher at 72.0% compared to 62.4% for female headed households.

***Table 4.11 Accessibility to education***

<b>Gender</b>	<b>Yes</b>		<b>No</b>		<b>Total</b>	
	<b>Freq</b>	<b>%</b>	<b>Freq</b>	<b>%</b>	<b>Freq</b>	<b>%</b>
<b>Male Household Heads</b>	208	72.0	81	28.0	<b>289</b>	<b>66.0</b>
<b>Female Household Heads</b>	93	62.4	56	37.6	<b>149</b>	<b>34.0</b>
<b>Total</b>	<b>301</b>	<b>68.7</b>	<b>137</b>	<b>31.3</b>	<b>438</b>	<b>100.0</b>

Table 4.11 shows that majority of the household heads selected for the study at 68.7% reported that education was easily accessible through free educational programmes introduced by the Kenya Government since 2002 for primary school level and day secondary Schools in 2008. The education institutions available in the three locations included private and public ECDE and primary schools, public day and boarding secondary schools. Accessibility to education entails geographical location of the schools and affordability. The findings revealed that 31.3% of the selected households who reported that they could not access education were either located far away from the nearest schools. Thus, children were required to walk very long distances or they were not able to afford the nearest school thus forced to walk long distances to access the school they could afford. This was confirmed by one female household head who reported that:

*“My son studies in a secondary school located 10 kilometers from here because that is the school I can afford to pay the required school fees.”  
(Female household head in an interview on 26<sup>th</sup> October, 2018).*

Further, the study established that the households selected either public or private schools for their children depending on their financial capability to cater for the required school fees. The study established that majority of the households who took their children to private schools earned above Ksh 11,000 per month as shown in Fig 4.3 from sale of milk, calves, dairy cows and other dairy products as identified earlier in this report (Table 4.4). This was supported by one male household head from Kinyona location who had this to say:

*“All my children attend private schools because I can afford to pay for their school fees from the sale of milk.” (Male household head in an interview held on 25<sup>th</sup> October, 2018).*

The study finding concurs with the results of a study carried out by Muia et al. (2011) on '*Smallholder dairy production in high altitude Nyandarua milk-shed in Kenya*' that dairy farming as an economic activity plays a significant role in the provision of adequate food, education, job creation, revenue collection and advancement of life for the households involved in dairy production. This implies that dairy farming plays an important role in ensuring accessibility of education to majority of the households. Through the use of income accrued from the dairy products, household heads are able to assure their school going children of accessible education thus enhancing household welfare.

#### **4.5 Perception of Men and Women on Gendered Access and Control of Land and Dairy Products**

This section presents the documented perception that male and female household heads selected for the study from the three locations held in regard to who should access land and dairy products by gender. The section has three sub-sections on perception of men and women on access, control and what they thought were the determinants for the same.

##### **4.5.1 Perception of men and women on gendered access to land and dairy products.**

As shown in Table 4.12, majority of the household heads selected for the study from the three locations indicated that both men and women should have equal access to land and dairy products at an average of 74.0%. However, there were notable variations on perceptions of male and female household heads on access to land and dairy products as discussed.

*Table 4.12 Household heads' perception on access to land and dairy products*

Land And Dairy Products	Households	Men		Women		Both		Total
		Freq	%	Freq	%	Freq	%	Freq
<b>Land</b>	Male	89	30.8	0	0	200	69.2	<b>289</b>
	Female	0	0	34	22.8	115	77.2	<b>149</b>
	<b>Total</b>	<b>89</b>	<b>13.2</b>	<b>34</b>	<b>7.8</b>	<b>315</b>	<b>71.9</b>	<b>438</b>
<b>Milk</b>	Male	35	12.1	49	17.0	200	69.2	<b>289</b>
	Female	0	0	39	26.2	110	73.8	<b>149</b>
	<b>Total</b>	<b>35</b>	<b>8.0</b>	<b>88</b>	<b>20.1</b>	<b>310</b>	<b>70.8</b>	<b>438</b>
<b>Manure</b>	Male	31	10.7	56	19.4	202	69.9	<b>289</b>
	Female	0	0	36	24.6	113	75.8	<b>149</b>
	<b>Total</b>	<b>31</b>	<b>7.1</b>	<b>92</b>	<b>21.0</b>	<b>315</b>	<b>71.9</b>	<b>438</b>
<b>Biogas</b>	Male	42	14.5	59	20.4	188	65.1	<b>289</b>
	Female	0	0	39	26.2	110	73.8	<b>149</b>
	<b>Total</b>	<b>34</b>	<b>7.8</b>	<b>98</b>	<b>22.4</b>	<b>298</b>	<b>68.0</b>	<b>438</b>
<b>Calves</b>	Male	46	15.9	0	0	243	84.1	<b>289</b>
	Female	0	0	38	25.5	111	74.4	<b>149</b>
	<b>Total</b>	<b>46</b>	<b>10.5</b>	<b>38</b>	<b>8.7</b>	<b>354</b>	<b>80.8</b>	<b>438</b>
<b>Dairy Cows</b>	Male	46	15.9	0	0	243	84.1	<b>289</b>
	Female	0	0	40	26.8	109	73.2	<b>149</b>
	<b>Total</b>	<b>46</b>	<b>10.5</b>	<b>40</b>	<b>9.1</b>	<b>352</b>	<b>80.4</b>	<b>438</b>

**a) Household heads' perception on access to land by men and women**

Table 4.12 shows that 30.8% of male household heads reported that men should have exclusive access to land while majority at 69.2% reported access to land should be by both men and women although no male household head reported exclusive access to land by women. The study established that male household heads still believe that

access to land should either be by men alone or by both men and women that is women should not have exclusive access to land. They reported that exclusive access to land by women would lead to neglect of cash crops which is a major source of income for the household thus influencing the capability of the household to provide household welfare. In comparison to female household heads, where 22.8% reported that access to land should be by women only while none felt that men should have exclusive access to land alone. On the contrary, majority of the household heads at 77.2% reported that access to land should be by men and women equally. This would lead to maximum productivity and enhanced household welfare.

The study established that all household heads selected for the study from the three locations believed that equal access to land by both men and women should enhance dairy production which in turn would lead to enhanced household welfare. It is important to note that very few household heads selected for the study reported that either men at 13.2% or women at 3.7% should have exclusive access to land as shown in Table 4.12. This could be associated with the marital status of the household heads whereby the single, separated and divorced male and female household heads believed that access to land should be by either men or women depending on the household heads gender. The female household heads reported that exclusive access to land by men would affect food and milk production because they mainly focus on cash crops thus influencing the household welfare. This was confirmed by one divorced male household head from Kinyona Location who reported:

*“.....Land is for use by men as the bread weaners of the family. Women are ‘helpers’.....” (Male household head in an interview held on 29<sup>th</sup> October, 2018).*

**a. Household heads' perception on access to milk by men and women**

Table 4.12 shows that 12.1% of male household heads and no female household head reported exclusive access to milk by men only while 26.2% of female household heads and 17.0% male household heads reported that women should have exclusive access to milk. They believed that exclusive access to milk by women would help in promoting household welfare given that most of the welfare related activities are associated with women's roles in the society. However, it is important to note that majority of both male and female household heads at 69.2% and 73.8% respectively reported that access to milk should be by both men and women. They reported that this would lead to enhanced household welfare. The male household heads reported that access to milk by women only would reduce the amount of money accrued from the sale of milk because they tend to focus more on family consumption compared to men who focus mainly on sale for income. This was confirmed by one male household head from Muthithi location who had this to say:

*".....I make sure I milk and sell the milk myself because I do not trust my wife with it....." (Male household head in an interview held on 17<sup>th</sup> October, 2018"*

On the other hand, one female household head from Kigumo location reported that:

*"Women should have full access to milk because men tend to use the money accrued from the sale of milk for their own needs without considering the needs of the family..." (Female household head in an interview held on 18<sup>th</sup> October, 2018."*

**b) Household heads' perception on access to manure by men and women**

The finding revealed that majority of the male household heads at 69.9% and female household heads at 75.8% reported that manure as a dairy product should be accessed equally by both men and women. In addition, 10.7% of the male household heads and

no female household heads reported that access to manure should be by men only compared to 24.6% of the female household heads and 19.4% of the male household heads who reported exclusive access to manure by women only. They believed that access to manure by women only is more productive than when accessed by men as they tend to use it on cash crops instead of fodder and food crops. This could have a negative effect on food production and general household welfare.

It is important to note that majority of the male and female household heads selected for the study from the three locations believed that access to manure by both men and women could improve provision of household welfare through increased food production, save on fuel through production and use of biogas and increased household revenue stream through sale of surplus food and cash crops. They explained that exclusive focus on cash crop by men and food crop by women could have a negative influence on household welfare. Therefore, for enhanced food security and sustainable livelihood for the household, they advocated for equal access to manure by both men and women. This was confirmed by one male household head from Kinyona location who indicated that:

*“Equal use of manure by both men and women could lead to increased farm productivity which would eventually lead to enhanced household welfare.”  
(Male household head in an interview held on 17<sup>th</sup> September, 2018”*

**c) Household heads’ perception on access to biogas by men and women**

The finding revealed that majority of the male and female household heads selected for the study from the three locations at 65.1% and 73.8% respectively reported that access to biogas should be by both men and women. It is important to note that a minority few of 14.5% male household heads and no female household heads reported exclusive

access to biogas by men only while 26.2% of the female household heads and 20.4% of the male household heads reported exclusive access to biogas by women only as shown in Table 4.12. Interestingly, no female household head reported exclusive access to biogas by men. This could be associated to the fact that biogas is used for cooking which is mainly done by women in most communities.

**d) Household heads' perception on access to calves by men and women**

The study revealed that majority of the male household heads at 84.1% and female household heads at 74.4% reported that access to calves should be by both men and women. They believed that for maximum dairy production then both men and women should be involved in taking care of the calves. The household heads selected for the study from the three locations believed that continuity and success of the dairy production depends on the nature of the calves that the households are able to feed and take care of thus need for concerted effort by both men and women. On the other hand, a minority of 10.5% of the male household heads and no female household heads selected for the study from the three locations advocated for exclusive access to calves by men. On the other hand, 8.7% of the female and no male household head selected for the study advocated for exclusive access to calves by women. This could be associated with dissatisfaction displayed by married women who reported that they do a lot of work in taking care of the calves but they do not share in benefits accrued from the calves. This was confirmed by one female household head from Muthithi Location who reported:

*“I am the one who feed these calves but when they are sold I do not benefit directly ...” (Female household head in an interview held on 18<sup>th</sup> October, 2018”*

The findings are in concurrence with Aregu (2014) study on *'Resilience of communal grasslands in Ethiopia Highlands, integrating gender and social learning'* that livestock management activities such as feeding the animal, watering and cleaning the calf pen remains to be women's role mainly under mixed crop livestock system. This could have an implication on access to calves and other dairy products which in turn could influence the ability of men or women to provide household welfare for their families.

**e) Household heads' perception on access to dairy cows by men and women**

Majority of the household heads at 84.1% and 73.2% for male and female respectively selected for the study from the three locations reported that both men and women should have equal access to dairy cows for maximum productivity. They were of the opinion that both men and women play a very important role in ensuring high profitability from dairy production for enhanced household welfare. On the contrary, very few male household heads at 10.5% and no female household head advocated for exclusive access to dairy cows by men only. While 9.1% of the female household heads advocated for exclusive access to dairy cows by women as shown in Table 4.12. These were mainly the single, separated and divorced female household heads. They reported that women's access to dairy cows will enhance their empowerment which in turn would influence their capacity to provide for their households.

In addition, majority of the married female household heads felt that they are left alone taking care of the dairy cows although they do not benefit from them. On the other hand, the male household heads reported that women are not able to take care of dairy cows and in most cases when the dairy cows are left solely in the hands of women, they

tend to reduce their production because women are not good at managing commercial agriculture. This was confirmed by one male household head from Kigumo location who reported:

“.... dairy cows cannot be left in the hands of women..... they do not know how to take care of them.” (Male household head in an interview held on 20<sup>th</sup> September, 2018).

#### **4.5.2 Perception of men and women on control of land and dairy products**

To establish men and women perceptions on control over land and dairy products, the household heads were requested to give their opinion on who should have control over land and dairy products. Table 4.13 shows that majority of the household heads reported that land and dairy products should be controlled by men. It is important to note that there were very few household heads who reported that women should control land and dairy product with the highest being in milk at 24.2% followed by manure at 17.1%. Its implication is that male and female household heads still have negative perceptions about women’s control over land and dairy products thus a need for sensitization and awareness raising on the benefits of women’s control over land and dairy products for enhanced household welfare.

*Table: 4.13 Household heads' perception on control over land and dairy products*

Dairy Products	Households	Men		Women		Both		Total
		Freq	%	Freq	%	Freq	%	Freq
Land	Male	236	81.7	1	0.3	52	18.0	289
	Female	89	59.7	13	8.7	47	31.5	149
	<b>TOTAL</b>	<b>325</b>	<b>74.2</b>	<b>14</b>	<b>3.2</b>	<b>99</b>	<b>22.6</b>	<b>438</b>
Milk	Male	128	44.3	53	18.3	108	37.4	289
	Female	39	26.2	53	35.6	57	38.3	149
	<b>TOTAL</b>	<b>167</b>	<b>38.1</b>	<b>106</b>	<b>24.2</b>	<b>165</b>	<b>37.7</b>	<b>438</b>
Manure	Male	123	45.6	33	11.4	133	46	289
	Female	39	26.2	42	28.2	68	45.6	149
	<b>TOTAL</b>	<b>162</b>	<b>37.0</b>	<b>75</b>	<b>17.1</b>	<b>201</b>	<b>45.9</b>	<b>438</b>
Biogas	Male	163	56.4	25	8.7	101	34.9	289
	Female	55	36.9	39	26.2	55	36.9	149
	<b>TOTAL</b>	<b>218</b>	<b>49.8</b>	<b>64</b>	<b>14.6</b>	<b>156</b>	<b>35.6</b>	<b>438</b>
Calves	Male	214	74.0	9	3.1	66	22.8	289
	Female	76	51.0	24	16.1	49	32.9	149
	<b>TOTAL</b>	<b>290</b>	<b>66.2</b>	<b>33</b>	<b>7.5</b>	<b>115</b>	<b>26.3</b>	<b>438</b>
Dairy Cows	Male	214	74.0	9	3.1	66	22.8	289
	Female	76	51.0	24	16.1	49	32.9	149
	<b>TOTAL</b>	<b>290</b>	<b>66.2</b>	<b>33</b>	<b>7.5</b>	<b>115</b>	<b>26.3</b>	<b>438</b>

**a) Household heads' perception on control over land**

The finding revealed that 74.2% of the household heads selected for the study from the three locations reported that control of land should be by men compared to 3.2% by women as shown in Table 4.13. Additionally, the finding also revealed that only 0.3% of male and 8.7% of female headed households reported that women should have control over land. This compares with the current situation as discussed earlier in this

report (Table 4.6) where land is mainly controlled by men at 83.6% compared to women at 12.6%. This shows that there exists gender imbalance in men and women's perceptions in relation to control of land.

In addition, as shown in Table 4.13, majority (74.2%) of the household heads selected for the study reported that decision making in relation to land use should be made by men because the land belongs to them. It was clear that age and level of education of the household head determined the perception of men and women on who should control land. The study established that the elderly men were of the opinion that land should be controlled by men because changing the status quo would interfere with the cosmic balance. While some of the educated young men supported control of land by women, they felt that women control of land would enhance food security for the family because their focus is on food production. This was reported by one male household head from Kigumo location who had this to say:

*“Land in Central Province belongs to men, it is what culture dictates and to change this perception by allowing women to own and control land will interfere with the existing peace. It can even lead to disintegration of the family unit” (Male household head in an interview held on 11<sup>th</sup> August, 2018).*

This was supported by another male household head from Kinyona location who had this to say:

*It is better if the land is controlled equally by both men and women because this would mean that decisions regarding its use are made by both men and women. However, if it is left in the hands of women, then men will be in trouble because women with power tend to be very controlling.” (Male household head in an interview held on 26<sup>th</sup> September, 2018).*

This concurs with the World Bank report (2012) on ‘*The effects of women economic power in Latin America and the Caribbean*’ that access and control over property by

women still remains a worldwide issue as depicted mainly in the growing economies such as Asia, Africa, and Latin America. These regions are still lagging behind despite their being signatories to the international, regional and national legal instruments and policy guidelines to promote gender equity (World Bank, 2012). As indicated in this report, women's control over land is still an issue because they do not have ownership and they are not able to assert themselves in decision making especially those decisions that involve the use of the land. This is likely to affect women capability to provide adequate household welfare requirements such as food, education and health.

**b) Household heads' perception on control of milk**

The findings revealed that majority of the male household heads at 44.3% believed that men should have control over milk compared to 18.3% who reported that women should have control over the milk. In addition, 37.4% of the male household heads reported that control of milk should be by both men and women as shown in Table 4.13. On the other hand, majority of the female household heads at 38.3% reported that control of milk should be by both men and women, 35.6% of them reported that women should have exclusive control of milk while 26.2% reported that men should have exclusive control over the milk. This compares with the current situation as discussed earlier in this study where milk is mainly controlled by men at 56.8% as shown in Table 4.6. This shows that with campaign awareness, the equality in control over milk could finally be enhanced. The 24.2% of the households selected for the study from the three locations reported that women's control over the milk would lead to improved education status, food security and better livelihood for the households. This was supported by one male household head from Muthithi location who had this to say:

*“Based on the contribution women make on day to day running of the dairy production, I think if they are allowed to control the benefits accruing from the production, they will be motivated to continue working hard thus increasing milk production.” (Male household head in an interview held on 16<sup>th</sup> October, 2018).*

One female household head from Kigumo location reported:

*“Given that I am the one who stays at home looking after the dairy cows, I think if I am left in charge of the milk then I will be able to improve on its productivity which will boost my capability to provide household welfare.” (Female household head in an interview held on 8<sup>th</sup> September, 2018).*

The study established that perception on the control of milk by men and women was mainly influenced by the level of education of the household head whereby the few men who had tertiary education and above felt that women should have control over the milk so that they can assist in provision of household welfare while those with no formal education felt that women should not be allowed to control milk because they will waste the money. This was reported by one male household head from Kigumo location who had this to say:

*“I am the one who receives the milk proceeds so that I can be able to plan on how it will be used. I cannot allow my wife to manage it because she will end up spending it on unimportant things.” (Male household head in an interview held on 10<sup>th</sup> August, 2018).*

In addition, the study established that men and women’s perception on milk was also influenced by the monthly income whereby when the milk accrued Ksh 20,000 and above, it was mainly controlled by men because it was considered a major undertaking which cannot be left under the care of the women. Further, the study established that women’s control over milk would be beneficial to the quality of household welfare if women are allowed to decide what proportion of milk to be sold ensuring there is enough left for household consumption. This was reported by one male household head from Kinyona location who had this to say:

*“I am able to cater for my household needs through the sale of milk. It is my main source of income.” (Male household head in an interview held on 2<sup>th</sup> August, 2018).*

Another male household head from Muthithi location had this to say:

*“I think consumption of milk at the family level will boost the health of the children. The surplus milk can be sold to boost the flow of income in the family. With these proceeds, women will be able to access quality health care services for themselves and their children.” (Female household head in an interview held on 13<sup>th</sup> September, 2018).*

The finding shows that there is an improvement between the current status and men and women’s perception in relation to who should control milk. This shows that there is need for awareness campaign targeting both men and women for enhanced control of milk which in turn will assure the household a better livelihood.

### **c) Household heads’ perception on control of Manure**

In Murang’a County, the study established that manure was mostly used in farming and therefore majority of the household heads selected for the study reported that both men and women should have control over manure at 45.9% as shown in Table 4.13. It is important to note that comparing household heads’ perception on men and women’s control over manure and current status as discussed earlier in this study, it was evident that majority of the households felt that manure should be controlled by men at 37.0% compared to women at 17.1% which does not vary too much from the current situation where men controlled 25.1% and women 18.5% as shown in Table 4.6.

The study established that the perception of men and women on control of manure was influenced by the level of education of the household head as discussed earlier in this report in Section 4.1.5. Educated household heads were of the opinion that manure should be controlled by both men and women for integration of both commercial and

subsistence farming which would lead to food security and stable family income to cater for other household needs. This was supported by one female household head from Kigumo location who had this to say:

*“In this era of hard economic times, I think it will be for the good of the household for the resources to be controlled by both men and women so that both of them can contribute to the family welfare.” (Female household head in an interview held on 27<sup>th</sup> August, 2018).*

Further, the study established that household heads’ perception was still biased against women in terms of control of manure. Only 11.4% of the male household heads reported exclusive control of manure by women compared to 45.6% by men, which can be associated with the patriarchal family system where men are the heads of the family and therefore they are the main decision makers at the household level. This was supported by one male household head from Kinyona location who had this to say:

*“Manure is a very important product in rural areas because it boosts agriculture and food security. Those men who do not want to spend money in buying food need to be in control of manure so that they can dictate on its use in the farm.” (Female household head in an interview held on 25<sup>th</sup> October, 2018).*

The findings are supported by Quisumbing, (2003) on ‘*Household decisions, gender and development*’ that enhanced women empowerment and inclusion through increased control of the factors of production. This will result into greater advancement of health services, sustenance and reduction in economic deficiency for all in the community. This means that for enhanced household welfare, the society should ensure that men as well as women are allowed equal control to manure. This is likely to increase food security and dairy production which results in enhanced household welfare.

#### **d) Household heads' perception on control of Biogas**

The finding revealed that majority of the household heads believe that control over biogas should be by men at 49.8% compared to women at 14.6% as shown in Table 4.13. The household heads indicated that because biogas installation is a huge investment, then it should be controlled by men given that they are the ones who should ensure that it is installed, maintained and repaired when the need arises. Comparing with the current situation where only 22.6% of the selected households had biogas as a dairy product as shown in Table 4.4, the study established that the perceptions of the selected household heads from the three locations shows that they are willing to embrace biogas as a technological advancement in dairy farming as a way of saving on fuel and income which results in enhanced livelihood for the households. However, it should be under the control of men. This was supported by one male household head from Muthithi location who had this to say:

*“At the moment I have a lot of manure and I will install biogas for family use in lighting and cooking. I know this will make my wife’s work very easy and less tiresome. The biogas power will also lead to reduction in the cost of electricity and fuel power used at home.” (Male household head in an interview held on 10<sup>th</sup> September, 2018).*

Further, the finding revealed that only 8.7% of the male household heads reported exclusive control of biogas by women compared to 56.4% by men. Based on this, it is clear that there exists a bias against women in that the households selected for the study believe that control of biogas should be mainly by men. The selected male household heads reported that biogas is a technology which cannot be left in the hands of women because they do not have the potential to maintain it. One male household head from Muthithi location reported that:

*“I invested heavily in the installation of biogas and I am the one who controls it because my wife cannot understand the complicated technology and safety measures associated with it but I know she is very okay with this arrangement.” (Male household head in an interview held on 18<sup>th</sup> August, 2018).*

This was also supported by one male household head from Kigumo location who had this to say:

*“I think it is important for biogas to be under the control of the men who are the heads of the family because it involves a lot of money during installation. Women cannot understand the technology used in installing it thus unable to maintain it.” (Male household head in an interview held on 22<sup>nd</sup> October, 2018).*

Further, the study established that men and women’s control of biogas had a direct influence on household welfare in that majority of the households reported that women’s control over biogas could lead to enhanced food security and education of the children because they felt that women are more involved in ensuring that the household had enough food and that the children have a conducive environment for learning. This was supported by one female household head from Muthithi location who reported that:

*“Women’s control over biogas will improve family livelihood because it will reduce the time taken in preparing food and improve household lighting for learners in the household for extra studies at night thus improving the education status.” (Female household head in an interview held on 12<sup>th</sup> September, 2018).*

This shows that there is bias against women in relation to male and female’s perceptions on who should control of biogas between men and women. This is likely to be translated in the actual control of biogas and other dairy products. Thus there is need for measures to be put in place in order to address these biased perceptions for equality in control of biogas.

**e) Household heads' perception on control of calves**

The finding revealed that majority of the household heads believed that men should have control over the calves at 66.2% compared to women at 7.5% as shown in Table 4.13. Additionally, there is a big margin between male and female household heads' perceptions on who should control calves whereby majority of male household heads at 74.0% reported exclusive control of calves by men compared to 3.1% of them who reported control of calves by women only.

On the other hand, majority of the female household heads at 51.0% reported exclusive control of calves by men only compared to 16.1% by women only. This does not deviate much from the current position as discussed earlier in Section 4.2.3, where calves were controlled by men at 76.7% compared to women at 13.9%. This shows that majority of the household heads believed that men should still control calves. Further analysis revealed that the disparity in the household heads' perceptions on control of calves between men and women was very big at 58.7%. This could be associated to the fact that in traditional Kikuyu community, all domesticated animals belong to men and therefore any animal born or bought in the households automatically becomes men's property. This was reported by one male household head from Kigumo location who had this to say:

*“All livestock in this household are mine. I make all decisions on which one to buy and which one to sell. My wife helps me in taking care of them. She is my helper as the Bible says.” (Male household head in an interview held on 20<sup>th</sup> August, 2018)*

This was retaliated by one female household head from Kinyona location who had this to say:

*“My work is to take care of my husband’s livestock. He does not live here but in case I want to sell a calf, he is the one to decide when and how much money the animal should fetch.” (Female household head in an interview held on 21<sup>st</sup> August, 2018).*

The findings are in concurrence with Rabiul et al. (2018) on *“Men’s perceptions of women’s participation in development initiatives in rural Bangladesh”* that ownership and control of livestock and land was associated with the traditional customs that favored men at the expense of women. Further, a few (7.5%) of the selected household heads from the three locations believed that control of calves by women could have a significant influence on the quality of household food, education, water and health as compared to men whom the household heads felt that their control of calves could not influence on household welfare because majority of them spend the revenue from the sale of calves on their own expenses. One male household head from Kigumo location reported that:

*“I have been rearing three calves which were born approximately four months ago. I sold one of them last week because I needed money urgently. The sale of calves helps me to raise money during such emergencies.” (Male household head in an interview held on 17<sup>th</sup> August, 2018)*

This is in line with the findings by Galiè et al. (2015) on *‘Exploring gender perceptions of resource ownership and their implications on food security among rural livestock owners in Tanzania, Ethiopia and Nicaragua’* where majority of the women respondents felt that men often used income accruing from dairy farming on their own individual needs rather than family needs, while the income received by women through dairy farming, food and cash crops, and sale of milk was used to cater for family needs such as paying school fees for the school going children, buying utensils, medicines and other family needs ,as well as saving for the future family use. The women who

responded, however, indicated that if they were given more control over resources and revenue accruing from them, they would be able to enhance food security for their families. This is a clear indication that there is need to advance and promote women control over the calves and its benefits for enhanced household welfare.

**f) Household heads' perception on control of dairy cows**

The finding revealed that majority of the household heads believed that men should have control over dairy cows at 66.2% compared to women at 7.5% as shown in Table 4.13. Additionally, majority of the male household heads selected for the study from the three locations at 74.0% reported exclusive control of dairy cows by men compared to 3.1% of those who reported exclusive control of dairy cows by women. On the other hand, majority of the female household heads at 51.0% reported control of dairy cows by men only compared to 16.1% of them who reported exclusive control of dairy cows by women. As discussed earlier in this study, this does not differ with a big margin from the current status where control over dairy cows is by men at 77.2% and 13.9% by women as shown in Table 4.6. This shows that male and female household heads' perceptions on control of dairy cows is still biased against women thus a need for campaign awareness on the significance of equal control of dairy cows by men and women for improved household welfare. Further analysis revealed that the disparity in the household heads' perception over control of dairy cows between men and women was very substantial at 58.7% which could be associated with the Kikuyu cultural belief that all domesticated animals at the household level belong to the household head who is definitely a man. One female household head from Muthithi location had this to say:

*“I bought this dairy cow from the money I received from a merry-go-round, however, I cannot sell it because it belongs to my husband” (Female household head in an interview held on 30<sup>th</sup> August, 2018).*

This sentiment was also supported by the Chief Kigumo location who reported that:

*“There are several cases of domestic violence due to ownership wrangles and sale of dairy cows especially when a woman buys the cow and there comes a time when she wants to sell it or when the man decides to sell it without the consent of his wife” (Chief Kigumo location in a guided questionnaire session on 23<sup>rd</sup> November, 2018).*

The findings are in line with the study by Galiè et al. (2015) on ‘*Exploring gender perceptions of resource ownership and their implications on food security among rural livestock owners in Tanzania, Ethiopia and Nicaragua*’ that traditional role of men as food providers was used to justify the ownership of resources. In particular, they quoted a natural law that establishes women’s role as care givers and men’s as bread weaners. Thus, for enhanced household welfare there is need to enhance women’s control of dairy cows and other dairy products.

#### **4.5.3 Determinants of men and women’s perception on access and control of land and dairy products.**

This sub-section gives detailed analysis and discussions on what the male and female household heads from the three locations selected for the study thought influenced the status of access and control of land and dairy products. As shown in Table 4.14, the determinants included culture, religious doctrines and beliefs, personal beliefs and convictions, legal requirements and level of formal education of the household heads as discussed.

**Table 4.14 Determinants of household head's perceptions on access and control of land and dairy products.**

Determinants	Male		Female		Total	
	Freq	%	Freq	%	Freq	%
Culture	237	82.0	140	94.0	377	86.1
Religious doctrines and beliefs	230	79.6	128	85.9	358	81.7
Personal beliefs and convictions	201	69.5	112	75.2	313	71.5
Legal requirements	185	64.0	121	81.2	306	70.0
Level of formal education of the household heads	211	73.0	90	60.4	301	68.7

*\*Multiple responses were allowed because it was an open ended question allowing the respondents to give their opinion on the determinants.*

**a) Culture.**

Majority of the male and female household heads selected for the study from the three locations at 82.0% and 94.0% respectively believed that culture determined the perceptions on access and control of land and dairy products by men and women as shown in Table 4.14. This can be closely attributed to the patriarchal culture in Kikuyu community that elevates men at the expense of women. It can also be associated to the boys' and girls' upbringing and social orientations in the community that accords boys high regard compared to girls. This was reported by one male household head from Kinyona location who had this to say:

*“All the properties in this household including my wife and children are mine. I am the one in control of dairy cows, land and any other product accruing from dairy farming and that is the way I was brought up” (Male household head in an interview held on 28<sup>th</sup> August, 2018).*

The study established that culture determines who has control over land and dairy products in terms of gender which in turn influenced household welfare. The selected household heads from the three locations reported that land and dairy products belong to the household head who is mainly a man. In addition, in case of death of the household head these resources are left to the older son who according to the Kikuyu saying '*mwana mukuru no ta ithe*' that is '*the eldest son is like the father*'. This and other sayings and proverbs in the community reinforces and perpetuates the discrimination against girls and women. The finding concurs with Kameri-Mbote (2002) on '*Land has its owners! Gender Issues in Land Tenure under Customary Law*' that observed that traditional beliefs and religious expectations act as impediments to resources and birthrights of women within a social system which is complicated for all including the educated and informed. This implies that there is need to critically assess and address the cultural beliefs and expectations that the society holds that reinforces and perpetuates gender bias in access and control of resources including land and dairy products. This would result into equality and enhanced household welfare.

#### **b) Religious doctrines and beliefs**

The findings show that 85.9% of female household heads compared to 79.6% of male household heads selected for the study from the three locations reported that religious doctrines and beliefs influences not only access and control but also men and women's perceptions in relation to who should access and control land and dairy products by gender as shown in Table 4.14. This could be associated to the fact that, as discussed earlier in this report majority of the household heads selected for the study from the three locations were Christians at 81.7% followed by Muslims at 17.8%. For the

Christians, majority of the male and female household heads stated that they are strict adherents of the biblical teachings which exalt men as the heads of the family as confirmed by one female household head from Kinyona location that:

*“The good book teaches us that women are the ‘necks’ and men are the ‘heads’” (Female household head in an interview held on 31<sup>st</sup> August, 2018).*

It was also confirmed by one male household head from Kigumo location who had this to say:

*“God created us first and later created women, in any case out of the man’s body” (Male household head in an interview held on 30<sup>th</sup> October, 2018).*

In relation to access and control of land and dairy products, the household heads observed that the Bible in the book of Genesis after man sinned against God, God gave men the mandate to till the ground until it produces enough for them thus justifying the exclusive control of land and dairy products by men at the expense of women. This was supported by one male household head from Muthithi location who reported that:

*“.....God himself gave the man the responsibility to provide enough for his family.....” (Male household head in an interview held on 29<sup>th</sup> August, 2018)*

As for the Muslims, they stated that the Koran expects men to provide leadership and headship in the family. They also reported that the Koran is very clear on matters of equality that one man is equal to two women. Even in inheritance, although the Koran advocates for inheritance by both men and women, it goes on to explain that one man shall receive an inheritance portion equal to that of two women. This was confirmed by one male household head from Muthithi location who reported that:

*“.... women should be allowed to control resources as dictated by the Koran, however, they should control a lesser portion compared to that of men.....” (Male household head in an interview held on 20<sup>th</sup> August, 2018).*

The findings are in concurrence with the study by Galiè et al. (2015) on '*Exploring gender perceptions of resource ownership and their implications on food security among rural livestock owners in Tanzania, Ethiopia and Nicaragua*' which identified religious beliefs as the major factors that influenced ownership to land and livestock in Tanzania whereby they used the Bible statement that, men are the leader of the family to justify men's ownership of resources. They also quoted the Bible to indicate that men are the leaders of the household and therefore women are not allowed to make decisions without consulting them. This shows that there is need for awareness campaign against the use of Holy Books that is the Koran and the Bible to reinforce and perpetuate inequality in access and control of resources including land and dairy products

**c) Personal beliefs and convictions.**

Majority of the female household heads at 75.2% compared to male at 69.5% reported that personal beliefs and convictions influenced men and women's perception on who should access and control land and dairy products at the household level. Data analysis revealed that male and female household heads had their personal beliefs and convictions that determined who should access and control land and dairy products at the family level. Male household heads felt that if women were allowed to control land and dairy products, they would become domineering, very manipulative and controlling and this would affect men's ego and self-esteem. Other male household heads reported that if women were allowed to control land and dairy products, they would become independent and thus very difficult for men to uphold their power on them. Others still felt that increased women's access and control of land and dairy products would make

men lose their authority over women thus affecting the family stability. This was reported by one male household head from Kinyona location who had this to say:

*“I cannot allow my wife to control my land because she will be very domineering and I will lose my position in the society as a man” (Male household head in an interview held on 23<sup>rd</sup> August, 2018)*

This was supported by one female household head from Muthithi location who had this to say:

*“I believe that because I was married and found all these dairy cows and land here, they belong to my husband as long as he is alive. And actually he is able to provide for our household needs.” (Female household head in an interview held on 28<sup>th</sup> August, 2018).*

The study also established that women who tried to control land and dairy products were considered arrogant, ‘not wife material’ and were not respected in the society thus the household heads believed that those women who owned land were either divorced or separated. This was supported by one male household head from Kigumo location who had this to say:

*“Women in this area do not request or fight over control of land and dairy products because they know those women who control land and dairy products are not respected in the society. Actually, majority of those women who control land and dairy products are either separated or divorced because they are not fit for marriage.” (Female household head in an Interview held on 12<sup>th</sup> August, 2018)*

This is in concurrence with the findings by Rabiul et al (2018) on ‘Men’s perceptions of women’s participation in development initiatives in rural Bangladesh’ that regardless of men’s age, educational and occupational backgrounds they expressed fear of losing male’s domination power, as an indication of male supremacy and fear of being under the control of women due to their increased independence and economic growth. This implies that there is necessity for increased awareness and civic education targeting both men and women for eradication of men’s fear and women empowerment to

embrace equality in land and dairy products as well as other resources for enhanced household welfare.

**d) Legal requirements**

The finding revealed that majority of female household heads at 81.2% compared to men at 64.0% reported that legal requirement is a determinant of access and control of land and dairy products. The study established that male and female household heads selected for the study have heard about the constitutional requirements on inheritance for both daughters and sons based on the Constitution of Kenya (2010). However, majority felt that it would be difficult to implement the requirement because in their community it has never happened. In addition, they felt that it was against their culture as discussed in the preceding section. They also lacked understanding of the constitutional requirements and its implementation plan. The study found that only men and old unmarried women were allowed to inherit the family properties including land and livestock. This was reported by one male household head from Kigumo location who had this to say:

*“My wife and I are ok with the arrangement that I control all the land and dairy products. In fact, she has never complained. Why would she complain and I have provided everything for her? I ensure she has enough money for her upkeep.” (Male household head in an interview held on 9<sup>th</sup> October, 2018)*

The above narration shows that either women are not conscious of their rights to own and control property or they have been forced by the circumstances to accept their situation of discrimination and insubordination. Another male household head from Muthithi location reported that:

*“I cannot share my properties equally between my daughters and sons because I know one day my daughters will be married of and this means that they will*

*share in the inheritance their husbands will have received from their parents.”*  
*(Male household head in an interview held on 8<sup>th</sup> September, 2018)*

These sentiments are in line with Kameri-Mbote (2007) on ‘*Women, land rights and the environment: The Kenyan experience*’ and KHRC (2006) report on ‘*Property and inheritance rights of women and girls in Kenya*’ that most people do not conform to women's property rights because they are mainly uninformed or ignorant of women’s constitutional rights and even the women themselves who are the victims are oblivious of them. This is because they have been socialized through a culture that holds women as inferior compared to men.

**e) Level of education of household head.**

The finding shows that 73.0% of the male household heads and 60.4% of the female household heads believed that the level of education of the household head influenced access and control of land and dairy products by men and women as shown in Table 4.14. The study established that majority of the male household heads selected for the study from the three locations with secondary level of education and above reported they were willing to allow their female partners to access and control land and dairy products because through education they are aware of the benefits of equality. In addition, some educated married female household heads also reported that they have some level of autonomy in access and control of land and dairy products because their male partners are educated as well. This was supported by one of the male household head from Kigumo location who had this to say:

*“I am a teacher in a nearby secondary school and my wife is the one in charge of dairy production. I have no problem with that because she is equally capable.”* (Male household head in an interview held on 16<sup>th</sup> August, 2018)

This closely relates to the findings by Galiè et al., (2015) on *'Exploring gender perceptions of resource ownership and their implications on food security among rural livestock owners in Tanzania Ethiopia and Nicaragua'* that it is only education which can help women to take care of their families and at the same time be good managers over the household resources. This implies that there is need to improve on accessibility of education to both girls and boys for enhanced household welfare.

#### **4.6 Strategies to Enhance Access and Control of Land and Dairy Products for Improved Household Welfare**

The fourth objective of the study was to establish the strategies that the household heads thought would enhance household welfare through access and control of land and dairy products by men and women. The frequently mentioned strategy was raising awareness on equal access and control of land and dairy products at 81.1% followed by enhancement of adult education program focusing on women at 75.8% and enforcement of legal requirements on human rights at 71.2% as shown in Table 4.15.

##### ***4.15 Strategies to enhance access and control over land and dairy products for improved household welfare***

Strategies	Gender					
	Male		Female		Total	
	Freq	%	Freq	%	Freq	%
Awareness raising on equal access and control of land and dairy products	230	79.6	125	83.9	355	81.1
Enhancement of adult education Program focusing on women	210	72.7	122	81.9	332	75.8
Enforcement of legal requirements on human rights	194	67.1	118	79.2	312	71.2

**a) Awareness raising on equal access and control of land and dairy products**

Majority of the male and female household heads selected for the study from the three locations at 79.6% and 83.9% respectively reported that the County government and religious institutions should embark on raising awareness on matters related to access and control of land and dairy products. They observed that men and women's equal access and control over land and dairy products is an important factor in the provision of adequate household welfare. The household heads reported that raising awareness should focus on changing the cultural beliefs and religious doctrines that hinders women's access and control of land and dairy products, equal/joint ownership of land and dairy products, women's human rights and the constitutional requirements of equal inheritance to resources by men and women and its implications on household welfare. This was confirmed by one female household head from Kinyona location who had this to say:

*“.... do you know we are not aware of our rights in relation to control of land? I heard that the constitution is saying that we should start inheriting our father's property. I do not think men will agree.....” (Female household head in an interview held on 17<sup>th</sup> August, 2018)*

As discussed earlier in this report, most of the land and dairy products were mainly controlled by men with very little being in the hands of women who were either single, separated or divorced. This is a clear indication that there is need to sensitize men and women on the importance of equal control of land and dairy products for improved household welfare. Eventually, this will put women in a better position to bargain for their rights when violated as argued by Kameri-Mbote (2007) on ‘*Women, land rights and the environment: The Kenyan experience*’ in her study which confirms that awareness of women's property rights will bring about equality in control over resources

by both men and women. Further, it argued that most people in Kenya do not observe women's property rights because they are mainly uninformed of their constitutional rights and even the women themselves who are the victims are oblivious of them. Awareness campaign will therefore eliminate or reduce women and men's ignorance on human rights and the benefits associated with equal access to land and dairy products by both men and women for the sustenance of the household.

**b) Enhancement of adult education program focusing on women**

The finding revealed that 72.7% of the male and 81.9% of the female household heads selected for the study from the three locations reported that there was need to focus on adult education focusing on women to enlighten them to take position and claim their rights in access and control of land and dairy products for enhanced household welfare. As discussed earlier in this report, majority of the household heads with no formal education were women at 25.5% compared to men at 13.5% as shown in Table 4.3. This shows that women education status is lower compared to that of men and thus it could be a hindrance to their access and control of land and dairy products. This could also be associated with the fact that women rights are violated frequently and that women themselves seem not to understand them. Therefore, the study established that there is need to ensure that adult education program in the County is strengthened to emancipate people and especially women from illiteracy and ignorance which are the major barriers to access and control of land and dairy products. This was reported by one female household head from Kigumo location who had this to say:

*“Education is the solution to gender inequality in access and control of land and dairy products. Educated women know the importance of holding bank accounts, practicing modern farming methods and thus they will not be*

*dependent on men for survival. This will lead to improved household welfare.” (Female household head in an interview held on 2<sup>nd</sup> August, 2018)*

This was also supported by the Chief Kinyona location who reported that:

*“Education is the key to equality thus a need to educate girls so that their bargaining power can be enhanced for improved household welfare for posterity of future generations.” (Chief Kinyona location in a guided questionnaire on 2<sup>nd</sup> November, 2018)*

This will ensure that both men and women will have control of land and dairy products for increased dairy production and enhanced household welfare. These findings are in line with the International Women's Human Rights Center (2014) report on ‘*Securing women’s land and property rights: A step towards addressing HIV, violence and food security*’ which identified lack of education and awareness of women's rights to property as a major hindrance to realizing equality for men and women’s access and control of resources. However, men too would require similar education and awareness raising to respect women’s rights.

### **c) Enforcement of the legal requirements on human rights**

The study findings revealed that majority of the male and female household heads selected for the study from the three locations at 67.1% and 79.2% respectively reported that there was need for the government to come up with a strategy for the enforcement of legal requirements on equal rights for men and women including rights access and control of resources. Both male and female household heads felt that for the promotion of equal control to land and dairy products, there is need for women to have property ownership. This can only be achieved through safeguarding and protecting the rights to property by both men and women for enhanced household welfare.

All household heads believed that the constitutional requirement is not enough for the promotion of equal rights and therefore the need for a clear roadmap on how the constitutional and other statutory requirements will be achieved. This was confirmed during an interview by one male household head from Kigumo location who stated that:

*“.....from 2010 when the constitution was promulgated, we have been hearing about the requirements on equal inheritance between sons and daughters and so far nothing has been achieved. At the moment parents are bequeathing sons without considering their daughters.....” (Male household head in an interview held on 3<sup>rd</sup> September, 2018).*

This is in concurrence with the study by Davis (2012) on *‘The emperor is still naked: Why the protocol on the rights of women in Africa leaves women more exposed to discrimination’* which found that the countries which have gender responsive constitutions and have ratified the Banjul protocol are faced with challenges of conceptualizing, and operationalizing its goals of gender equity in access and control of property. It is important to note that the solution to gender imbalances lies on political will and commitment to gender equity.

## **CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter is divided into three; the first part presents the summary of the findings from the study findings. The second part presents the conclusion of the study drawn from the summary of the study findings and the third part brings out the recommendations generated from the study findings.

### **5.2 Summary of Findings**

The study aimed at investigating the gendered access and control of land, dairy products and their influence on household welfare in Murang'a County, Kenya. In addressing the first objective which focused on the status of access and control of land and dairy products, the study established that milk, dairy cows, calves, manure and biogas are the existing dairy products. In addition, the findings revealed that access to land and dairy products was mainly by both men and women, while control was mainly by men. The study revealed that to a greater extent, there is a relationship between women and men's access and control of land and dairy products and household welfare thereby negating the null hypotheses of the study.

In relation to objective two which aimed at establishing the existing status of household welfare, the study revealed that majority of the households had some ability to access quality health services from both public and private hospitals. In relation to acceptable household shelter, majority lived in semi-permanent shelters compared to temporary and permanent shelters. In addition, majority of the households had three meals and

above per day which means that food was adequate although very few of them had quality food in terms of variety of food per intake and balanced diet. The study also revealed that the main sources of household water was piped, rivers, boreholes and harvested water although in some instances, the safety of the water was not guaranteed. On the other hand, education was easily accessible to all through free education programmes introduced by the Kenyan Government since 2002 for primary schools and 2008 for day secondary Schools.

The third objective focused on men and women's perceptions on access and control of land and dairy products. The study established that majority of male and female household heads selected for the study reported that access to land and dairy products should be by both men and women jointly, while control should be mainly by men. Further, culture, religious beliefs and personal convictions were the major determinants of men and women's perceptions on access and control of land and dairy products by men and women.

On the measures to be put in place to enhance access and control of land and dairy products for enhanced household welfare, the study identified awareness raising on equal access and control of land and dairy products, enhancement of adult education program focusing on women as the major strategies. Equally important was the enforcement of legal requirements on human rights.

### **5.3 Conclusion**

Based on the findings and discussions in the preceding chapter, the study concludes that gender access and control to land and dairy products influences household welfare. The influence however was found to be positive where both men and women in the

households accessed and controlled these resources. Further, the main driving forces for dairy farming in Murang'a County were found to have been milk, biogas, manure and calves. There was an existing gendered access and control of land and the dairy products which influenced the household welfare as confirmed by the testing of null hypotheses. Additionally, the status of access and control of land and dairy products was strongly influenced by cultural, religious beliefs and practices by men and women which in turn influences their perceptions on who should have access and control over land and dairy products.

The diversity in gendered access and control to the resources spills over to the status of household welfare (health, shelter, food, water and education). It is on the basis of the identified diversities as espoused by the Marxist Feminism theory and Women Empowerment Framework that the study came up with the suggested strategies generated from the views of the study participants as well as the following recommendations for redress.

#### **5.4 Recommendations**

From the study findings and conclusions, two levels of recommendations were identified focusing on:

- i. Policy and actions to improve men and women's access and control over land and dairy products.
- ii. Areas of further research.

##### **5.4.1 Policy and actions to improve men and women's access and control over land and dairy products.**

Based on the findings and conclusion of the study, the following recommendations are made:

**1. The Murang'a County government in collaboration with community based and religious organizations:**

- Undertake awareness and sensitization campaigns on the importance of gender equity and equality in access and control of land and dairy products for improved household welfare.
- Conduct civic education on legal requirements on gender and human rights especially women's rights to access and control resources including land and dairy products.

**2. The Murang'a County government to:**

- Demonstrate commitment to the achievement of gender equity by allocating resources in support of gender mainstreaming initiatives in all sectors as allocated in the County Integrated Development Plan (CIDP- 2017-2022).
- Strengthen the adult education programme to reach as many adult women as possible so that they can be able to make informed decisions on claiming their rights to access and control resources at the household

**5.4.2 Areas for further research.**

Based on the findings of the study, further studies could be done as follows:

- 1) Gender differences in provision of labor and management of dairy farming in Murang'a County, Kenya.

- 2) Similar study on other counties in Kenya focusing on the influence of men and women's access and control of land and dairy products on household welfare.
- 3) Influence of socio-political and economic factors on men and women's access and control of dairy products.

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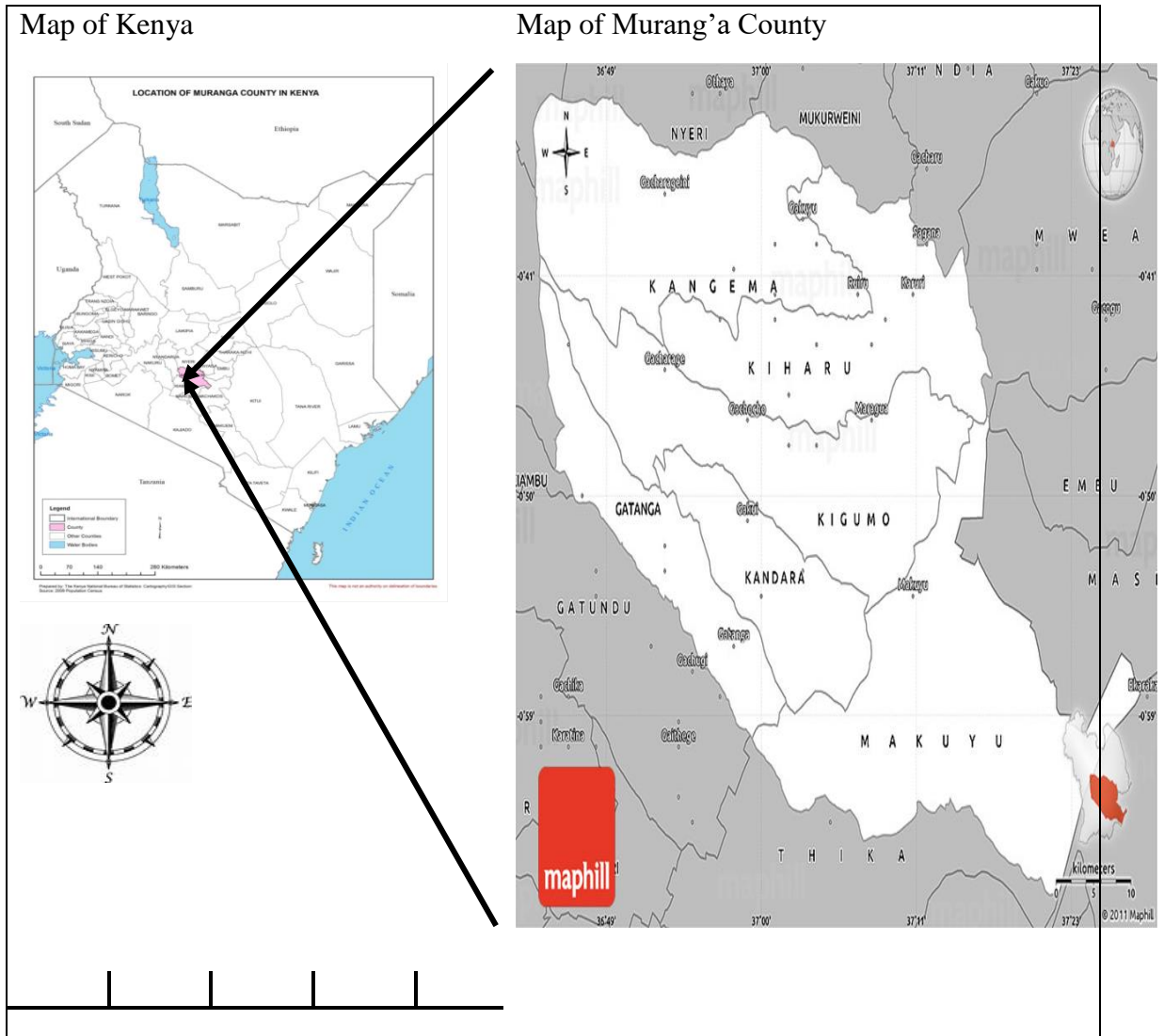
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### APPENDIX 1: MAP SHOWING THE STUDY AREA



**APPENDIX 2: INTERVIEW SCHEDULES FOR HOUSEHOLD HEADS (HHS)**

**Section 1: Existing Status of Access and Control of Land and Dairy Products**

1. Demographic Characteristics of household heads:
  - i. Gender  Male  Female
  - ii. Marital Status  Single  Married  Widowed  Divorced  Separated
  - iii. Age brackets of household heads  18-35  35-44  45-55  55 and above
  - iv. Number of school going children \_\_\_\_\_ Age of children 0-5years  6-14 years  15-18 years  19-26 years  Above 26 years
  - v. Level of education of household heads  primary school  secondary level  tertiary level  university level  no formal education
  - vi. Religion  Christianity  Islamic  Any other Specify \_\_\_\_\_
  - vii. Economic status of the households per month?  Ksh 5,000 and below  Ksh 6,000- Ksh 10,000  Ksh 11,000-Ksh 20,000  20,000-50,000  above ksh 50,000.
2. What dairy products do you have (Tick appropriately) Milk  Manure  Biogas  Calves  Dairy Cows  Any other Specify -----

3. In your opinion, what do you have access and control over in regard to the dairy products (*Tick appropriately*)

Products	Access		Control	
	Men	Women	Men	Women
Land				
Milk				
Manure				
Biogas				
Calves				
Dairy cows				
Others ( <i>Identify</i> )				

## **Section 2 Existing Status of welfare in households practicing dairy farming**

4. (i) In your opinion, do you think you and your household have access to the highest attainable standards of health (*Tick the appropriately*)

Total ability [ ] Able [ ] Somewhat Able [ ] Inability [ ] Total Inability [ ]

(ii) Give your explanations for the response indicated in 4(i) above.

5a. How many meals do you usually have per day (*tick appropriately*); Once [ ] Twice [ ] Thrice [ ]

b. Give explanations for your response in 5(a)

c. Would you say that the meal(s) you have are of: Quality [ ] Enough quantity [ ]

6a. Where do you get your drinking water? (*tick appropriately*) Piped water [ ] River [ ] Borehole [ ] Harvested water [ ] Any other (specify)\_\_\_\_\_

b. In your opinion, is the water safe and sufficient for your dairy use? (*Tick appropriately*) Yes [ ] No [ ]

c. Explain your answer in 6 (b) above. \_\_\_\_\_

7a. Do your children access education? (*tick appropriately*) Yes [ ] No [ ]

- b. In your own opinion, do you think your children get quality education? (*tick appropriately*) Yes [ ] No [ ]
- c. Give explanations for your response in 7(b)

**Section 3: Men and Women Perceptions on Gendered Access and Control of Land and Dairy Products**

*Probe for reasons in question 1 below*

8. In your opinion, who should access land and dairy products? (*probe for reasons*)

- a) (i) Who should access land? Men [ ] Women [ ]  
 (ii) Give explanations for your response in a(i) \_\_\_\_\_
- b) (i) Who Should access milk? Men [ ] Women [ ]  
 (ii) Give explanations for your response in b(i) \_\_\_\_\_
- c) (i) Who should access manure ? Men [ ] Women [ ]  
 (ii) Give explanations for your response in c(i) \_\_\_\_\_
- d) (i) Who should access biogas? Men [ ] Women [ ] \_\_\_\_\_  
 (ii) Give explanations for your response in d(i) \_\_\_\_\_
- e) (i) Who should access calves? Men [ ] Women [ ]  
 (ii) Give explanations for your response in e(i) \_\_\_\_\_
- f) (i) Who should access dairy cows? Men [ ] Women [ ]  
 (ii) Give explanations for your response in f(i) \_\_\_\_\_

9. In your opinion, who should control land and dairy products? (*probe for reasons*)

- a) (i) Who should control land? Men [ ] Women [ ]  
 (ii) Give explanations for your response in a(i) \_\_\_\_\_
- b) (i) Who Should control milk? Men [ ] Women [ ]  
 (ii) Give explanations for your response in b(i) \_\_\_\_\_
- c) (i) Who should control manure ? Men [ ] Women [ ]  
 (ii) Give explanations for your response in c(i) \_\_\_\_\_
- d) (i) Who should control biogas? Men [ ] Women [ ]
- e) (i) Who should control calves? Men [ ] Women [ ]

(ii) Give explanations for your response in e(i) \_\_\_\_\_

f) (i) Who should control dairy cows? Men [ ] Women [ ]

(ii) Give explanations for your response in f(i) \_\_\_\_\_

10. What determines men and women's perceptions on access and control of land and dairy products?

**Section 3: Strategies to improve Access and Control of Land and Dairy Products for Improved Household Welfare**

11. What can we do to enhance household welfare through equal access and control of land and dairy products by women /men?

*Thank you*

### **APPENDIX 3: QUESTIONNAIRE FOR THE KEY INFORMANTS**

I am Judy Wambui Mwangi, a Doctor of Philosophy student at Kenyatta University. I am undertaking a study on “*Gendered access and control of land and dairy products and their influence on household welfare in Murang’a County, Kenya.*” This study is purely for academic purposes; your consent to participate will be highly appreciated.

Thank you

#### **Back ground Information of the Key Informants:**

- i. Gender  Male  Female
- ii. Occupation/Position: \_\_\_\_\_
- iii. Age bracket  18-35  35-44  45-55  55 and above
- iv. Level of education  No Formal Education  Primary School  Secondary Level  Tertiary Level  University Level
- v. Religion  Christianity  Islamic  Any other Specify \_\_\_\_\_

#### **Section 1: Existing Status of Access and Control of Land and Dairy Products**

1. Demographic characteristics for dairy farmers: (*probe for reasons*)
  - i. Most of the dairy farmers are ?  Male  Female
  - ii. What is the marital status of the dairy farmers?  Single  Married  Widowed  Divorced  Separated
  - iii. Most of the farmers are in which age brackets?  18-35  35-44  45-55  55 and above
  - iv. Most of the household heads practicing dairy farming have what level of education?  No Formal Education  Primary School  Secondary Level  Tertiary Level  University Level

- v. Majority of the dairy farmers are of which religion?  Christianity  Islamic  Any other specify \_\_\_\_\_
- vi. Majority of the dairy farmers earn how much per month?  Ksh 5,000 and below  Ksh 6,000- Ksh 10,000  Ksh 11,000-Ksh 20,000  20,000-50,000  above ksh 50,000.
- 2. What dairy products are found in this area (Tick appropriately) Milk  Manure  Biogas  Calves  Dairy Cows  Any other specify
- 3. In your opinion, who has access and control over land dairy products (*Tick appropriately* )

Resources	Access			Control		
	Men	Women	Both	Men	Women	Both
Land						
Milk						
Manure						
Biogas						
Calves						
Dairy cows						

**Section 2 Existing status of welfare in households practicing dairy farming**

- 4. In your opinion, do you think the households have access to the highest attainable standards of health (Tick the appropriately)  
Total ability  Able  Somewhat Able  Inability  Total Inability
- 5 a. How many meals do the households usually have per day (*tick appropriately*);  
Once  Twice  Thrice
- b. Give explanations for your response in 5(a)
- c. Would you say that the meal (s) they have are of: Quality  Enough quantity

6a. Where do they get their drinking water? (**tick appropriately**) Piped water [ ] River  
[ ] Borehole [ ] Harvested water [ ] Any other (specify)\_\_\_\_\_

b. In your opinion, is the water safe and sufficient for dairy use ? (*Tick appropriately*)  
Yes [ ] No [ ]

c. Explain your answer in 6 (b) above. \_\_\_\_\_

7a. Where do their children go to school? (*tick appropriately*) Governemt schools [ ]  
Private schools [ ]

d. In your own opinion, do you think their children get quality education? (*tick appropriately*) Yes [ ] No [ ]

e. Give explanations for your response in 7(b)

**Section 3: Men and Women Perceptions on Gendered Access and Control of Land and Dairy Products**

***Probe for reasons in question 1 below***

8. In your opinion, who should access land and dairy products? (*probe for reasons*)

a) (i) Who should access land? Men [ ] Women [ ]

(iii) Give explanations for your response in a(i) \_\_\_\_\_

b) (i) Who Should access milk? Men [ ] Women [ ]

(ii) Give explanations for your response in b(i) \_\_\_\_\_

c) (i) Who should access manure ? Men [ ] Women [ ]

(ii) Give explanations for your response in c(i) \_\_\_\_\_

d) (i) Who should access biogas? Men [ ] Women [ ] \_\_\_\_\_

(ii) Give explanations for your response in d(i) \_\_\_\_\_

e) (i) Who should access calves? Men [ ] Women [ ]

(ii) Give explanations for your response in e(i) \_\_\_\_\_

f) (i) Who should access dairy cows? Men [ ] Women [ ]

(ii) Give explanations for your response in f(i) \_\_\_\_\_

9. In your opinion, who should control land and dairy products? (*probe for reasons*)

a) (i) Who should control land? Men [ ] Women [ ]

(iii) Give explanations for your response in a(i) \_\_\_\_\_

b) (i) Who Should control milk? Men [ ] Women [ ]

(ii) Give explanations for your response in b(i) \_\_\_\_\_

c) (i) Who should control manure ? Men [ ] Women [ ]

(ii) Give explanations for your response in c(i) \_\_\_\_\_

d) (i) Who should control biogas? Men [ ] Women [ ] \_\_\_\_\_

(ii) Give explanations for your response in d(i) \_\_\_\_\_

e) (i) Who should control calves? Men [ ] Women [ ]

(ii) Give explanations for your response in e(i) \_\_\_\_\_

f) (i) Who should control dairy cows? Men [ ] Women [ ]

(ii) Give explanations for your response in f(i) \_\_\_\_\_

10. What determines men and women's perceptions on access and control of land and dairy products

### **Section 3: Strategies to improve Access and Control of Land and Dairy Products**

#### **for Improved Household Welfare**

11. What can be done to improve household welfare through enhanced access and control of land and dairy products by women /men?

*Thank you*

**APPENDIX 4: OBSERVATION CHECKLIST**

1. Number of dairy cows\_\_\_\_\_
2. Number of calves per household\_\_\_\_\_
3. Biogas system [ ]Yes [ ]No
4. Nature of the house? (*Observe the nature of the house and tick appropriately*)  
 Temporary (*Mud walled and grass thatched*) [ ] Semi permanent  
 (*Brick/timber/iroonsheet walled and iron sheet roof*) [ ] Permanent ( *Stone  
 walled and iron sheet/tiled roof*) [ ]
5. Tanks for water harvesting [ ]Yes [ ]No
6. Nature of the household livelihood Well off [ ] Worse off [ ]

**APPENDIX 5: GRADUATE SCHOOL AUTHORIZATION LETTER**

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KENYATTA UNIVERSITY  
GRADUATE SCHOOL

E-mail: [dean-graduate@ku.ac.ke](mailto:dean-graduate@ku.ac.ke)

Website: [www.ku.ac.ke](http://www.ku.ac.ke)

**OUR REF:** C82/32196/15

P.O. Box 43844, 00100  
NAIROBI, KENYA  
Tel. 8710901 Ext. 57530

Date: 4<sup>th</sup> July, 2018

The Director General,  
National Commission for Science, Technology & Innovation,  
P.O. Box 30623,  
**NAIROBI**

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MS. JUDY W. MWANGI REG. NO. C82/32196/15

I write to introduce **Ms. Mwangi** who is a Postgraduate Student of this University. She is registered for Ph.D. Degree programme in the **Department of Gender & Development Studies in the School of Humanities & Social Sciences**.

Ms. Mwangi intends to conduct research for a Ph.D. thesis entitled, "**Gendered Access and Control of Land, Dairy Products and their Influence on Household's Welfare in Murang'a County, Kenya**".

Any assistance given will be highly appreciated.

Yours faithfully,

  
**MRS. LUCY N. MBAABU**  
**FOR: DEAN, GRADUATE SCHOOL**

RM/cao

**APPENDIX 6: RESEARCH PERMIT**

**THIS IS TO CERTIFY THAT:  
MS. MWANGI JUDY WAMBUI  
of KENYATTA UNIVERSITY, 342-10  
THIKA, has been permitted to conduct  
research in Muranga County**

**Permit No : NACOSTI/P/18/1817/23942  
Date Of Issue : 27th July,2018  
Fee Received :Ksh 2000**

**on the topic: GENDERED ACCESS AND  
CONTROL OF LAND, DAIRY PRODUCTS  
AND THEIR INFLUENCE ON HOUSEHOLD  
WELFARE IN MURANG'A COUNTY, KENYA**

**for the period ending:  
25th July,2019**



*Smmmbw*  
**Director General  
National Commission for Science,  
Technology & Innovation**

.....  
**Applicant's  
Signature**

**CONDITIONS**

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.



**REPUBLIC OF KENYA**



**National Commission for Science,  
Technology and Innovation  
RESEARCH CLEARANCE  
PERMIT**

**Serial No.A 19777**

**CONDITIONS: see back page**

## **APPENDIX 7: CONSENT FORM FOR THE RESPONDENTS**

### **Respondents' identification and study objectives**

You are hereby selected to participate in a research study to be undertaken by Judy Wambui Mwangi from Kenyatta University. The study focuses on gendered access and control of land and dairy products and their influence on household welfare. This study is a requirement for her completion of Doctor of Philosophy degree in Gender and Development Studies.

### **Research Procedures**

If you are willing to be involved in this study as a respondent, you will be required to append your signature at the spaces provided at the end of this form after you are satisfied with the answers given on your queries. This study comprises of an interview that will be administered to individual respondents in Kigumo Sub-County, Murang'a County, Kenya. You will be required to provide answers to a number of questions focusing on the status of gendered access and control of land and dairy products and their influence on household welfare.

### **Time Required**

The involvement in this study will take a minimum of 30 minutes and a maximum of one hour

### **Risks**

There are no predetermined risks by the researcher which could occur to you through your involvement in this study other than the normal everyday risks

### **Benefits**

The expected benefits from contributing in this study include but not limited to providing information for future use in the design and execution of measures and strategies focusing on gendered access and control of land and dairy products and their influence on household welfare. The study will not have any direct benefits to the individual participants

### **Confidentiality**

The outcomes of this inquiry will be documented in a research findings report. The results will be analyzed in such a way that the respondent's identity will not be identified or singled out from the final research findings report of this study. In this regard, the researcher has the right to use and publish non-identifiable data. The participant's confidentiality and informed consent will be upheld. The final data from all the participants will be analyzed and presented in form of averages and percentages. The data will be securely stored and will only be accessed by the researcher. On

completion of the study, all information that can be directly linked to an individual respondent will be destroyed.

### **Involvement and Withdrawal**

Your involvement is completely on voluntary basis. You have the freedom to either participate or not. If you choose to contribute you can later withdraw if you want to without penalties of any kind.

### **Questions about the Study**

If you have queries or apprehensions during the time of your involvement in this study, or after its conclusion or any other need in relation to this study. Kindly contact us:

**Researcher:** Judy Wambui Mwangi

Department: Sociology, Gender and Development Studies

Kenyatta University

Jwambuu1@gmail.com

**Supervisors:** Prof Elishiba Kimani

Dr. Casper Masiga

Department: Sociology, Gender and Development Studies

Kenyatta University

### **Giving of Consent**

I have gone through this consent form and I have an understanding of its requirements of me as a participant in this study. I freely agree to be involved in this study. I hereby confirm that I have attained the legal of 18 years.

I give assent to be (*video/audio*) recorded throughout the interview. \_\_\_\_\_  
(initials)

\_\_\_\_\_

Respondent (signed)

Date

\_\_\_\_\_

Researcher (signed)

Date

\_\_\_\_\_