

**INFLUENCE OF GENDER MAINSTREAMING ON IMPLEMENTATION OF FOREST  
CONSERVATION IN THE EASTERN BLOCK OF  
MAU FOREST COMPLEX, KENYA**

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the conferment of the Degree of Master of Arts in  
Geography of the Faculty of Arts and Social Sciences, Kisii University**

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**DECLARATION BY CANDIDATE AND SUPERVISORS**

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This thesis project is my original work and has not been presented for a degree in any other university.

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# PLAGARISM

## **WORD DECLARATION**

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**CHEROTICH Z. KOSGEY**

## **DEDICATION**

This research is dedicated to my dear husband Robert Kemei, my children Nerville and Keith, sisters, brothers and my relatives for their great support and encouragement to do all my best. I sincerely thank my parents and in-laws for instilling their unquestionable morals in me and sacrificing all their support. my thanks go to my classmates for the unending moral support, It's through their encouragement that gave me hope. Thank you all, may God bless.

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## ABSTRACT

Forest conservation is a global phenomenon that is practiced on a public and private basis. Public forest conservation is the most popular undertakings as a public good. Whereas forest conservation is assumed to be undertaken in the public interest, issues pertaining to gender mainstreaming tend to emerge in terms of gauging the success or failure of such proposals. This study investigated the influence of gender mainstreaming on implementation of forest conservation in the Eastern Block of Mau Forest Complex especially in reforestation; harvesting and general conservation of the forest. The study sought to establish the extent of integration of gender specific concerns in the implementation of forest conservation; evaluate the contribution of gender specific experiences in the implementation of forest conservation and; to analyze the challenges of gender mainstreaming in forest conservation in the Eastern Block of Mau forest Complex. The study employed descriptive research. The study was conducted in Mau forest complex- eastern block. The target population was 240 households. The sample size was 139 respondents. Data were collected using questionnaire, interviews and focus group discussion. Collected data were analyzed using descriptive statistics; frequencies, percent, means and standard deviation for structured questions while the interviews and focus group discussion were summarized based on themes. The data was presented using tables and figures. Majority of the respondents agreed that indeed both genders were issued with permits to collect. Women were in agreement that they were the ones who were responsible for fetching water from the forest. Collecting of herbs was not only a both gender affair but it showed that both genders had adequate knowledge of the type of trees and their usage. Respondents overwhelmingly agreed that they were allowed to use the forest for collecting of foodstuff. The study established that there was a gender imbalance in issuance of permit for timber harvesting from the forest and that there were major corruption issues surrounding issuance of permits to cut timber, whereby forest officials took advantage of their positions to do business. The study established that culture was a barrier to forest conservation. Considering that most of the respondents were male, it became clear that culture indeed was the biggest challenge in mainstreaming gender in conservation of forest. Through the interviews, female respondents pointed out clearly that their society often discriminate against them in public matters yet they were as knowledgeable as men. stakeholders must involve parties from both genders in any conservation activity now and even in the future. stakeholders should carry out sensitization and empowerment programs in order to bring on board all members of society.



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## **LIST OF ABBREVIATIONS/ACRONYMS**

|              |                                                                            |
|--------------|----------------------------------------------------------------------------|
| <b>CBO</b>   | Community Based Organization                                               |
| <b>CEDAW</b> | Convention on the Elimination of All Forms of Discrimination against Women |
| <b>CLT</b>   | Certificates of Land Transfer                                              |
| <b>CPR</b>   | Common Property Resources                                                  |
| <b>EPs</b>   | Emancipation Patents                                                       |
| <b>FAO</b>   | Food and Agriculture Organization                                          |
| <b>GoK</b>   | Government of Kenya                                                        |
| <b>IUCN</b>  | International Union for Conservation of Nature                             |
| <b>MECC</b>  | Mountain Empire Community College                                          |
| <b>MENR</b>  | Ministry of Environment and Natural Resources                              |
| <b>NTFP</b>  | Non-timber Forest Products                                                 |
| <b>OECD</b>  | Organization for Economic Cooperation and Development                      |

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

The implementation of forest conservancy programs and initiatives has since time immemorial been done from a statist and control-oriented point of view which has marginalized the concerns and experiences of women in society. Conservation activities have been initiated and implemented from a masculine point of view yet women have the same stake in forest conservation as men (Ellis, 2000).

Globally, the dependence on natural sources of energy is still very high and with no doubt, this continued dependence on natural sources of energy will continue to diminish forests and the ecosystem in general. For example, the creation of a national park in Madagascar without the consultation of the female population has resulted in them being discriminated against when it comes to accessing the forest and its resources (Järvilehto, 2005).

In the Philippines, forestry has been a bone of contention for a long time. The government has set up several initiatives aimed at promoting equal access and use of forest resources (Pulhin, 2004). People are given rights of ownership and use through the issuance of local tenure deeds. Allocation of these instruments has, however, been plagued with gender bias with women being seriously short changed by the process (World Rainforest Movement, 2002). Although the government has done a lot to encourage gender mainstreaming in property ownership and rights through affirmative actions, women are still greatly disenfranchised with regards to property rights. In many rural areas, they are still actively

not allowed to own any kind of property. Men are given higher preference over women in land issues, especially in forest areas, as they are considered the primary caretakers and tillers of these lands (Mendoza, 2007). Without land ownership rights and privileges, many women have to depend on the men in their lives for their livelihood which further perpetrates gender inequality (Mendoza, 2007). They are also unable to access credit making it difficult for them to grow their way out of having to be submissive to the men in their lives.

Nepal has had stellar success with community based development strategies and models. Most of their forests are held under community trusts although this model also faces a lot of challenges due to their management. The significant successes of these models have been widely adopted throughout the globe (DOF, 2010). They however face significant problems due to the power struggles between central and local governments in their management. Through these cooperation arrangements, Nepal has been able to develop in excess of 15,000 community forest user groups (CFUGs) increasing the overall contribution of community forests in the overall country's forest cover (DOF, 2010).

CFUGs play an important role in increasing democratic practices in the management of forest resources in Nepal. Although women representation in forest management is still significantly low at 5% of the total CFUGs, the total area under their leadership is huge. With more than a million hectares under their control, women are increasingly taking a front seat to the management and use of forests and the resources contained therein. CFUGs have two major advantages to the Nepalese people. First, they improve the quality of life of the families living around them by creating jobs and giving them sustainable revenues and

incomes. Second, they provide plant and animals with the environment to regenerate and flourish (Dhital, 2009).

Many rural households in Kenya still heavily rely on wood and charcoal as their main source of fuel. The collection of firewood and burning of charcoal is a mainstay of the women folk. In East Africa, these fuel sources are as much popular amongst the urban communities as they are with the rural communities (Eyong&Gerke, 2007). Kenya is among the leading countries in destruction of forest cover due to charcoal burning and firewood fetching with Rift Valley being the leading region (Wahungu, 2014). It is obvious that continued use of firewood and charcoal eventually leads to deforestation and other effects which potentially hurt conservation process (Ongugo, 2001). Unfortunately, this basic truth has been swept under the carpet by many stakeholders of forest conservation in terms of relegating women to the periphery when it comes to conservancy programs initiatives and implementation.

Achieving true forest conservancy requires involvement of everybody because everybody is involved in the destruction of forest, directly or indirectly. Undermining the role and experiences that women could bring on board in the process of initiating and implementing forest conservation programs means that true forest conservation cannot be achieved any time soon (Wahungu, 2014).

Research by (Bond *et al.*, 2008) suggests that there is gender stereotyping when it comes to forest issues and that efforts to clarify the false narrative are not commensurate to the magnitude of the stereotype. The problem is not only in Africa but it is a global problem which over time has not received the attention it requires. An example is the low up take of forestry jobs by women especially the young ones due to forestry being considered a reserve

for men. In many societies, the masculine features of forest work have given it a macho image that has resulted in fewer women looking to work in them (Bond, *et al.*, 2008). However, today's forestry industry has undergone significant growth and transformation to include more complex and refined roles like management and human capital resources. How they make money has also seen a lot of change from the traditional logging and lumberjacking to the current conservation and preservation measures that attract both local and international tourists.

Many forest policies are also outdated and continue to systemically discriminate against women. Many parts of Africa and Asia witnessed a slight decrease in women participation in forest recruitment drives (FAO, 2010). They are not actively included or consulted because planning committees assume that the work will be undesirable to them or that they already have other preoccupations (Cifor, 2004)

Although much has been done to increase the participation of women in the running of forest resources throughout the globe by devolving the ownership of large tracts of forest land from central government to local government and community management, the inclusion of women in management positions is still lacking (Angelsen, 2007; Agarwal, 2001).

The changes in forest policies over the years has not done much with regard to increasing gender mainstreaming even though women still remain more dependent on forest resources in their everyday lives (Shanley & Gaia, 2001; Colfer, 2005). Their knowledge in forest processes has also seen substantial growth although this growth has not translated in more inclusion in policy and strategy formulation nor have they significantly impacted

conservation efforts in any way (Agarwal, 2009). The forest industry is still largely characterized with poor financial management and planning resulting in its overall underdevelopment and inefficiency in providing sustainable and practical solutions to many social problems (Komarudin *et al.*, 2008; Agarwal, 2001; Acharya & Gentle, 2006).

It is due to male biases that women in different societies continue to have very little say in the running and ownership of forest resources. This biases are also evident in the disproportionate sharing of revenues and responsibilities. While women might be required to put in more efforts than their male counterparts, they often have to contend with very little benefits. Their participation is also often limited to times of shortage and hardship and the forest resources are not as productive or profitable (Agrawal and Chatre, 2006).

Poor education and professional backgrounds, and poorly developed personal and professional relationships further make women unfit for top jobs that can influence policies and strategies (Crewe & Harrison, 1998). Understanding the great role women play in conservation processes is key to ensuring forest regeneration especially in most developing countries where these resources have been depleted due to years of unchecked exploitation and the current effects of climate change caused by global warming (CIFOR, 2008). Active involvement of women in the affairs that influence their daily lives could further the conservation agenda since they derive a lot of benefits from forest resources (Torri, 2010).

Ghana's economy relies heavily on its natural resources making forests a key player in the country's socioeconomic well-being. They fulfill national, economic, ecological and environmental goals, hence, the need for policy attention to promote sound and sustainable development for the reduction of poverty. Two main ecological zones may be recognized;

namely the closed or high forest zone in the south, covering about 34% of the country, and the savannah grassland zone cover the remaining 66% (Dickson & Benneh, 1989).

Most of Ghana's export crops are produced from the closed forest which is very rich and diverse in flora, containing over 70% of the floral diversity of the country. This zone also constitutes the major economic hearth of the country, the major cocoa and cash crop areas and provides competition among the three main economic sectors of agriculture, mining and logging (Hens & Boon, 1999). As a conservation of biodiversity strategy, the forests are protected in more than 200 reserves and managed by the Forestry Commission and the Department of Wildlife.

Measures introduced to slow down the rate of deforestation have not borne much fruits and the over exploitation of forest resources is a point that it threatens the existence of the biodiversity of the country. This inefficiency in policy effectiveness can be attributed to the low level of inclusion of local communities that are intimately familiar with these resources and the problems that face them, and also have a higher capacity to create meaningful change, during policy formulation and in management. Women constitute a high proportion of these communities and continue to wallow in poverty and despair. The continuing shrinkage of the virgin forest raises issues on sustainable forest management involving women and men and other relevant stakeholders.

Tanzania is using agroforestry initiatives to increase its tree cover and reduce the effects of climate change. Their initiatives are also aimed at improving soil structure and conservation of the delicate ecosystem through promotion of forest regeneration and conservation (Kitalyi et al., 2010). The government has however faced a lot of resistance from farmers across the

country. Gladwin et al. (2010) found that most farmers are hesitant to try out agroforestry even when they understand the benefits and have seen models that work due to poor sensitization and awareness creation by the government. They further face significant challenges in accessing high quality inputs. The relatively small quantities of land they hold are also often not sufficient for both subsistence farming and agroforestry. These challenges are significantly increased where women are involved due to their already diminished roles and presence in society (De Weerd, 2010).

Kenya has a forest cover of close to 3.5 million hectares which translates to slightly under 6% of the total land area. Half of this area is covered in indigenous forests. These resources are considered as important national treasures due to their inherent economic, social and environmental benefits (MENR, 2013).

Kenya still faces a lot of challenges when it comes to the effective management of its forest sector. The forest department was established in 1942, under the colonial government, to provide active oversight and management of the country's forest resources. Over exploitation however resulted in the significant decrease in forest cover from 60% in the 40s to slightly under 4% in just a period of five decades. The devastation of the country's forest resources can be attributed to four major factors. First, an increasing population necessitated the clearing of land for agriculture and settlement. Second, changes in land policy and use did not consider sustainable exploitation of forest resources. Third, the country had weak legal frameworks to protect forests from over exploitation and destruction. Last, rampant corruption ensured the destruction of large tree populations from illegally obtained logging permits and the authorities turning a blind eye to illegal logging. Corruption plays an exceptionally large role in the demise of the country's forest and tree cover. Poor structures



and weak institutions have plagued the forestry industry to date denying the country of a strong and dedicated environmental governance policy (MENR, 2013).

Many Kenyans, and indeed others across the globe, are highly reliant on nature for food and income. It enables food to grow and also acts as a cleaning agent for air and water. The ecosystem also plays an important role in regulating climate through an intricate process known as ecosystem services. The country stands to reap a lot of financial benefit from nature if they undertake meaningful investments into developing their capacity (World Resources Institute, 2007).

The increased dependence of natural resources has led to rapid loss of forest cover and has increased threats to the biodiversity (WWI, 2007). Biodiversity enhances sustainable relations between human beings and nature. The declining biodiversity affect the wellbeing of humans who depend on nature for day to day livelihoods as well as companies which depends on nature in terms of raw materials.

The gazettelement of Mount Elgon forest in 1932 sparked a fury of conservation processes in the area (Ongugo et al, 2001). The forest holds a lot of significance in the country due in part to its rich biodiversity. It hosts a variety of rare animal and plant life and is also a natural border demarcation. The mountain lies in between Kenya and neighboring Uganda making the mountain forest governed under two distinct systems and laws. Part of the forest on the Kenyan side was converted into a national park 5 years after the country got its independence and later converted into national reserve. This is a clear indication that the forest is on a serious decline.

Kenya has adopted the Nepalese models of cooperative forest governance through the establishment of Community Forest Associations (CFAs). These initiatives have encouraged the development of strong community based organizations (CBOs) and the increased training of forest officers (Sioni, 2006). By involving local communities, the government has been able to increase its total patrolling and conservation capacity making conservation efforts more efficient. It has also significantly improved relations between the government and the locals and increased local investment into ensuring the protection and development of these natural resources.

The Mau Forest constitutes a large percentage of Kenya's closed-canopy forest cover (Sioni, 2015). It plays important roles in ensuring the smooth functioning of ecological services in the country and the region. First, it regulates river flow and controls soil erosion. Second, it recharges ground water storage and further purifies water. Last, it is home to a wide variety of animal and plant species. The forest regulates a fragile micro climate environment whose effects are advantageous to the regions around it as far as Western province and Nyanza. The Mau Forest complex directly and indirectly benefits many parts of the country economically and socially. Many surrounding towns get their water supply from the Mau catchment area while many others derive their livelihoods from the area. The Ogiek community that dwells within the Mau complex rely on the complex for their food and shelter. The complex networks of rivers starting from the complex drain their waters into Lake Victoria, the source of the Nile. The complex is therefore critical to the regional climate stability. Its waters also support the delicate ecosystems in the Mara and the Serengeti (GOK, 2009).

The Mau complex however continues to face doom in the face of illicit clearing for settlement and farming, and illegal logging for timber (Wahungu, 2014). In the past two decades alone, 25% of the complex has been cleared to pave way for settlement of marginalized communities and provide space for farming. It is estimated that more land has been reclaimed from the forest in more recent years at a rate that is alarming and unsustainable (GOK, 2009).

The levels of forest cover in the Mau complex had reached such lows that they elicited the intervention of the then Prime Minister of Kenya, The Right Honorable Raila Odinga, to bring together all stakeholders in the region in a bid to find sustainable and practical solutions to the problem. These meetings culminated in a consultative forum organized in Nairobi 8 years ago in which members from public and private institutions from both the country and across the globe came together to rally for the conservation of the Mau.

Kenya has fallen behind its African counterparts in ensuring a healthy forest cover. Its total cover stands under 10% of the continents average with most forests being densely concentrated in mountain and mountain range areas. These mountain forests also form the country's water catchment making the Mau complex an area of significant important to the socioeconomic status of the country (GOK, 2009).

Despite the fundamental role which Mau Forest Complex plays in the economic and social development of the country, years of illegal and unchecked settlements and logging have destroyed it (GOK, 2009). Clearly, these initiatives and programs aimed at restoring this important complex have been insufficient, inappropriate and more importantly stereotypical. This is because the initiatives have not taken into considerations the issue of gender

mainstreaming which is necessary for sustainable restoration of the forest and in the conservation. The level of gender mainstreaming in forest conservation is not only low but worrying because no one seems to be paying attention to the need of mainstreaming gender in conservation, and as a matter of fact, conservation will continue being a mirage in the precious Mau Complex (Oxfam, 2010).

## **1.2 Problem Statement**

Forest conservation has been practiced in many countries for the purposes of realizing sustainable development (Akotsiet. *al.*, 2006). This has comprised afforestation, sustainable utilization of forest resources, alternative sources of energy and as a means of climate adaptation and change, health, settlement and food security (Walker, 2008). The need for integration of gender concerns and experiences in forest conservation is a recent phenomenon that has attracted gradual attention of a number of countries especially in Ghana, Thailand and Mali (Tania *et al.*, 2007). Notwithstanding this fact, gender mainstreaming in forest conservation remains a challenge especially with the apparent marginalization of affected communities. This is more pronounced with lack of adequate integration of the concerns and experiences especially of women in the implementation of forest conservation programs (Ardayfio-Schandorf *et al.*, 2007).

In the Eastern Block of Mau Forest Complex, forest cover has diminished by more than 25% over 20 years (Nkengla, 2007). This has impacted on sustainable livelihood at both the national and the local level. The forest conservation implementation plans have been in place to address the various types and consequences of encroachment (Nkengla, 2007). However, the extent to which gender mainstreaming has been integrated in these plans is not

explicit in particular; the phases of reforestation, harvesting and general management of the complex manifest low levels of gender equality (Ardayfio-Schandorf *et al.*, 2007).

It is in this respect that this study attempted to investigate the influence of gender mainstreaming on implementation of forest conservation in Eastern bloc of the Mau forest complex, Kenya.

### **1.3 General Objective**

The general objective of this study was to assess the influence of gender mainstreaming on implementation of forest conservation in Mau forest Complex, Kenya.

#### **1.3.2 Specific Objectives**

The specific objectives of this research were to:

- i. Establish the extent of integration of gender specific concerns in the implementation of forest conservation in Mau Forest Complex, Kenya.
- ii. Evaluate the contribution of gender specific experiences in the implementation of forest conservation in Mau forest complex.
- iii. Analyze the challenges to gender mainstreaming in forest conservation in Mau Forest Complex.

### **1.4 Research Questions**

- i. To what extent are gender specific concerns integrated in the implementation of forest conservation in Mau Forest Complex, Kenya.
- ii. What is the contribution of gender specific experiences in the implementation of forest conservation in Mau Forest Complex?

- iii. What are the challenges of gender mainstreaming in forest conservation in Mau Forest Complex?

### **1.5 Justification of the Study**

It has been recognized that women play an important role in all sectors of the forest industry. Their contributions add value to forest and tree population developments all through the value chain, starting from seed propagation to seedling handling. These activities have resulted in the employment of many women in the sector. They however do not enjoy equal pay and working conditions and recognition as their male counterparts.

The biggest problem is the absence of women in policymaking and processes relating to forestry. Increasing support to vulnerable groups can significantly increase women participation and inclusion in policy and strategy formulation and can go a long way in ensuring gender equality in the sector.

Practical and sustainable solutions can only be achieved if all stakeholder perspectives and concerns are taken into consideration. Actively developing tools and policies that overlook gender when collecting and analyzing data can increase the fullness of the information collected. By virtue of women's assigned roles by society, they require special needs to effectively deliver their expectations. If those needs are not satisfied the entire society suffers. It is in the interest of society to ensure that women's needs are satisfied.

Mai *et al.* (2011) argued that gender sensitive research approaches were effective in improving tree planting tendencies, ensuring equity in distribution of wealth and revenues, and make policy development more efficient. Gender is a social construct but its long existence has made it hard to separate from the fabric of society. It specifies the roles and

perceptions of how different sexes should behave and act. Other social factors such as age and religion also significantly influence gender roles in different societies (Gurung & Quesada, 2009).

Bonnard and Scherr (1994) further discussed the prevalence of gender insensitivity in forest management. Many men are interested in trees for commercial exploitation while women predominantly look at trees as sources of fuel and food for livestock. These differences in thought make men and women seek different information and knowledge in the management of trees. There are several other factors that affect agroforestry including size of land, age, availability of labor and inputs, and the dependency level of an individual. Since most of these factors are interconnected with gender, understanding them can provide key insights into how to ensure sustainable conservation and redevelopment of the Mau Forest.

### **1.6 Significance of the Study**

The study is expected to generate useful information which can give pointers to the Ministry regarding issues to do with gender mainstreaming in forest conservation and management. The study is expected to inform the Ministry of Environment and Natural Resources on the existing gaps in the fight against forest degradation. This will enable the Ministry to review existing mechanisms and systems set to support the Mau Forest Complex conservation. The study will also be of much help to area residents in knowing their rights concerning forest conservation.

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

The study was carried out in the Eastern block of Mau forest Complex. It involved residents both male and female in the Mau forest neighborhood and forest officers in the area. The study focused on gender mainstreaming with a specific target on gender specific concerns and experiences in the Eastern Block of Mau Forest Complex and how they influence the implementation of forest conservation.

### **1.8 Limitations of the Study**

This study collected data from the Eastern block of Mau Forest neighborhood residents and not any other residents therefore; generalizations cannot be made to other forests since they don't have the same characteristics as Mau, however, other researchers should carry out studies in other areas to find out the influence of gender mainstreaming on implementation of forest conservation. Some respondents were hesitant in giving thorough and correct information. The researcher developed rapport with the respondents in order to win their trust, the respondents were also assured of the confidentiality of the information given.



## **2.8 Theoretical Framework**

The study will employ Garret Hardin's theory of Tragedy of the Commons (Ostrom, 1990). This theory has proven effective in studying the challenges faced in the management of natural resources. It studies the effects of letting several individuals have unfettered access to natural resources. The resulting impunity leads to greed and competition that leads to severe environmental degradation since the resources are not given enough time to regenerate (Ostrom, 1990). Many studies support the need for regulation and oversight by government or public oversight agencies with regard to common resources. Forest resources are threatened through over exploitation. Therefore, it is imperative that the concerns of both genders be taken into consideration in their conservation.

The tragedy theory is the primary framework in the analysis of the joint operations especially between the central government and local administrations and communities. It focuses on more than the economic implications of such cooperation by giving the analyses a human face and voice. Institutions should endeavor to enhance their social functions because they are formed to enhance the lives of the people that they serve. Making flexible rules and regulations is the best way to improve the efficiency of conservation of the ecosystem through interdisciplinary approaches (Anderies et.al, 2004).

## **2.9 Conceptual Framework**

The conceptual framework explains the relationship between participation of men and women in forest management. This framework is developed to obtain information on the inter-relationships between men and women (gender relations) in resource use, access and control in forest management.

These actors are pulled together by different interests and needs towards a common resource, forest. For sustainable management of forests and their resources, involvement of all stakeholders regardless of their level is necessary in the management process. A participatory approach is therefore fundamental for access to and control over resources and decision-making for all stakeholders. This would lead to greater participation, women empowerment, food security and consequently improved forests.

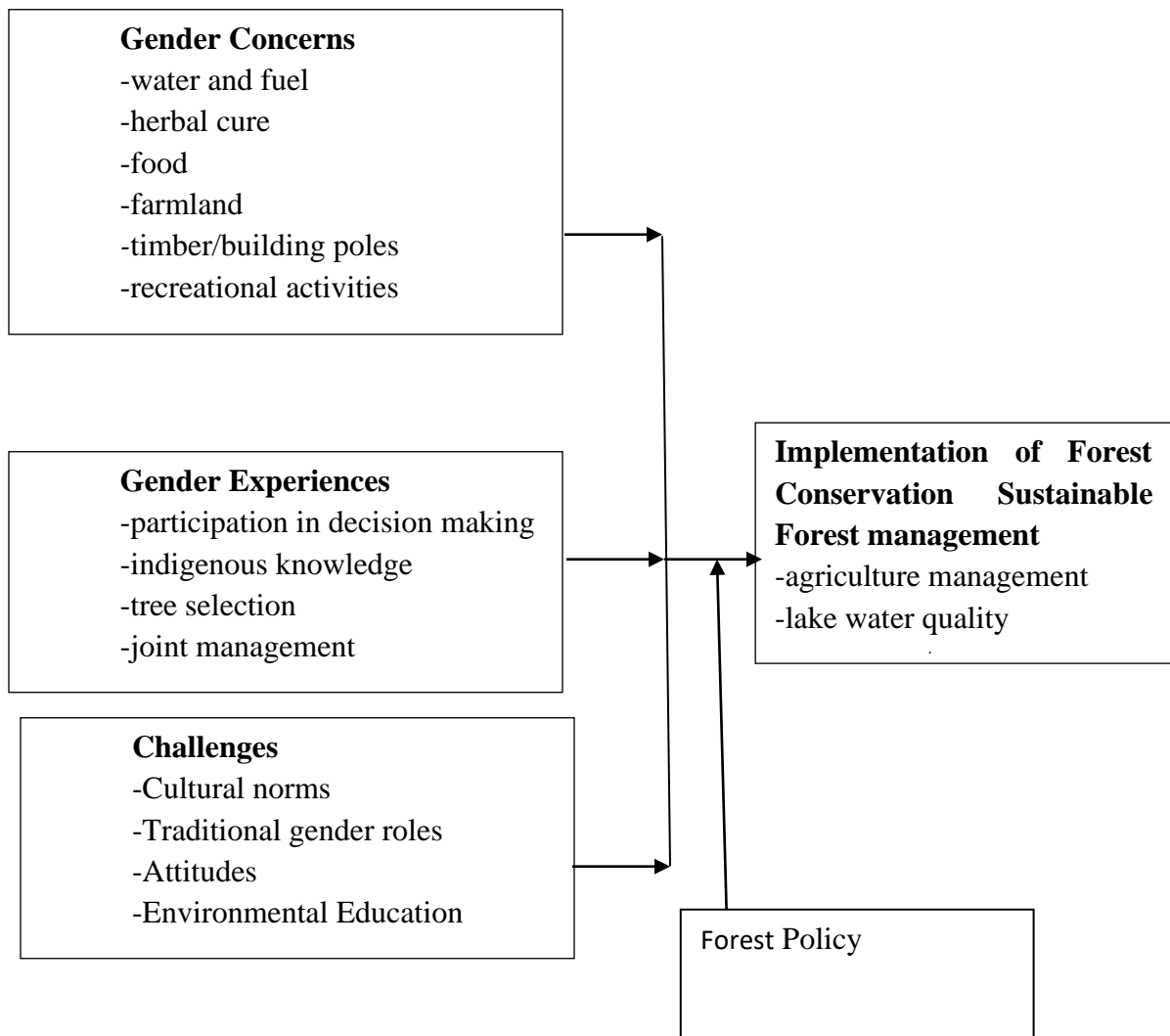
The efficient livelihoods framework will be used to show the link between gender roles, forest resources and livelihoods. One of the objectives of the study on the dependence of local people on forest resources for livelihoods will be achieved in this way.

The objectives on the assessment of representation of women in forest management committees and factors that affect greater participation will be achieved using participatory tools and feminist theories. Also, the researcher will use the works of Fortmann & Bruce (1988) and Fortmann (1987) which will give an insight on the gendered nature in management of forest and its resources such as access and control rights.

In order to understand the role of men and women in the management of forest resources and its influence on livelihoods, an investigation will be made on who is permitted to do what, where, when and how using the gender analytical framework. Insights from the works of Rocheleau and Edmunds (1997), Price (2001, 2003), Goebel (2003) and Turner (2003), will enable the researcher to bring out factors which influence management practices such as social and political institutions, power relations and belief systems.

### Independent Variables

### Dependent Variable



## **1.10 Operational Definition of Key Terms**

**Forest conservation:** The knowledge and practice of developing forests for posterity and sustainability.

**Gender:** Social constructs of behavior and temperament that are commonly accepted as the norms on the Mau Forest Complex.

**Gender approach:** Theoretical and methodological instrument with which to analyze gender relations, understand their dynamics in forest conservation, and build proposals to promote equity.

**Gender analysis:** Collection and analysis of sex disaggregated information pertaining to forest conservation in the Mau Forest Complex.

**Gender Balance:** Having the same number of men and women in the community surrounding Mau Forest Complex.

**Gender Equality:** Equal rights, responsibilities and opportunities of women and men and girls and boys

**Gender Equity:** Fairness, giving extra attention to a certain category of people that has faced obstacles and constraints

**Gender Mainstreaming:** Strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of Mau Forest Conservation policies and programs, so that women and men gain equality.

**Gender Relations:** Interactions between men and women as demonstrated by their respective roles in power sharing, decision making, and the division of labor, returns to labor, both within the household and in the society at large

**Gender experience:** the Knowledge gained through use of forest resources

**Gender concerns:** the feeling to conserve the forest due to the benefits derived by the community.

**Gender responsive technologies:** Technologies that pay due attention to gender differentiated needs and constraints, reduce drudgery among women, release time for alternative activities, and promote labour efficiency and sustained household economic and welfare gains.

**Mau Forest Complex:** A forest zone that sits within Kenya's Rift Valley and is the largest indigenous mountain forest in East Africa. It serves as a critical water catchment area for the country and is the source from which numerous rivers flow, many of them draining into bodies of water like Lake Victoria, which receives 60% of its water from Mau. These rivers exist as lifelines for much of western Kenya's wildlife and people.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Forest Conservation**

The Eastern Block of the Mau Forests is the largest canopy cover forest in Kenya with a total area that rivals those of Mt. Kenya and the Aberdares (GOK, 2009). Its massive size makes it the principal water catchment area in the western part of the country which increase its importance to the socioeconomic state of the country (GOK, 2009). The Mau complex has significant ecological service benefits to the African continent in general and Kenya in particular. First, it is a source of natural ground water and supplies the region with fresh water through an elaborate system of ground and underwater streams and rivers. Second, it plays an important role in ensuring soil fertility and structure. The thick vegetation holds the soil together and adds valuable nutrients to it. The elaborate water network distributes this fertility downstream and makes the underlying areas fertile and productive. Last, the thick vegetation cover provides habitats for different species of animals and birds. It also provides a microclimate that encourages intensive agricultural production all year around. It is therefore a key factor in economic growth as it directly supports two of the three main sources of Kenyan exports, that is tourism and agriculture (GOK, 2009). It also supports all local industries in various capacities.

The sustainability and continuity of the Mau is of significant strategic advantage to the water situation of the African continent. The area is the source of 12 major rivers that feed the five major lakes throughout the country. These water bodies form the backbone of regional

water distribution networks and have international recognition. It is especially important to the continuity of the Nile, Africa's largest river. Five rivers that start from the Mau complex feed the Lake Victoria which is the source of the Nile (GOK, 2009).

For years, the government has tried in vain to enhance conservation efforts in the Mau ranges. Social factors play a large role in increasing the ineffectiveness of most conservation strategies. Without active inclusion of locals who reside in such forests, there is bound to be a series of backlash and resistance that can have especially disastrous consequences. Locals usually personalize the natural resources in their surroundings. When the government moves in with regulatory policies and safeguards, they feel cheated out of their resources even in cases where they did not understand the potential of such resources before government actions. In retaliation, they often go on an exploitation spree in a bid to ensure that everyone does not benefit from such resources. Including locals in policy formulation and management of resources in their communities increases their investment in their continuity and development and results in more synergies in both knowledge and practice. The state usually takes a passive stance in such cooperative ventures allowing local organizations, and communities to develop effective strategies and policies (Interview with MECC, 06.12.2006).

## **2.2 Gender Mainstreaming**

Gender mainstreaming has been perceived as, 'the linguistic antithesis to gender marginalization' (Morley, 2006). Although widely used in development and policy circles, its theory takes root from feminist theory and practice (Morley, 2006). It can be understood as a consciously organized move towards actively including gender factors during

investigations into procedures and policies (Schalkwyck & Woroniuk, 1998). According to Waterhouse and Sever (2005), gender mainstreaming has become a fashionable term to signify gender equality and equity. It has also become a major strategy for development practitioners to promote gender neutrality. But, it should be noted that gender equality; that is, treating women and men the same way differs from gender equity. Equity explains the relative differences in women and men with regards to the control and access of resources, and the resultant differences in socioeconomic and life experiences. To ensure objectivity, it is imperative that mainstreaming programs be designed with gender in mind so as to enhance their neutrality.

There are many definitions. The overarching principle is that of systematic interventions for change towards equality between the sexes. Gender under The United Nations Economic and Social Council (ECOSOC) is defined as:

"...the process of assessing the implications for women and men of any planned action, including legislation, policies or programs, in any areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programs in all political, economic, and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality" (OCHA, 2006).

In the 1970s and 80s, there was a sudden mass awareness of women's positive role in development initiatives leading to the emergence of 'Women in Development' (Seleeyet *al.*, 1975). For example, 1975 was designated as the International Women's Year by the general assembly of the UN with the first ever international governmental conference on the inclusion of women in development and peace in Mexico City. This conference identified



the contributions and importance of women in global development and implementation of peace and development strategies.

21 years ago, the Fourth World Conference on Women held by the UN in Beijing highlighted significant areas touching on gender inequality. A Platform of Action was then drawn up following this conference which was built from the 1979 Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) declared that:

“Discrimination against women violates the principles of equality of rights and respect for human dignity and amounts to an obstacle to women’s participation on equal terms with men in the political, social, economic and cultural life of their countries and hampers the growth of prosperity of society and the family” (CEDAW, 1979).

CEDAW therefore provided the basis for equity and equality regardless of gender in political, social and economic spheres. Although the Platform of Action drawn up in Beijing was not enforceable under law, it developed best practices when dealing with policies for women. Its findings sought to address 12 areas of contention. First, the issue of poverty among women. Second, it sought to ensure equal access to education and training opportunities. Third, increase women’s access to healthcare services. Fourth, mitigating gender based violence against women. Fifth, it sought to look at the effects any type of conflict has on the female population. Sixth, it sought to identify discrimination due to economic policies and structures. Seventh, the importance of including women in power and decision-making. Eighth, ways to increase proactive focus in women empowerment. Ninth, the role of human rights in gender mainstreaming and protection of women’s rights. Tenth, the role of the media in ensuring women play an increased role in the development and

protection of the economy and the country. Eleventh, the role of women in the environment. Last, the role of the girl-child in today's world (Sida, 2005; Morley, 2006).

Gender mainstreaming was officially adopted by the UN in the year 1995 followed by European Union (EU) and its members (Morley, 2006). The EU has adopted mainstreaming as the basis of its gender policy, which has been developed since the Treaty of Amsterdam.

Currently, over a hundred countries have embraced gender mainstreaming in their state machineries (Morley, 2006). In 1999, the UN secretariat on the global situation of women adopted a proposal to deal with all forms of bias against women. The protocol's main aims were conducting enquiries and making appeals on issues regarding violations of CEDAW. Many countries are signatories of international regulations that promote gender neutrality and inclusion such as CEDAW, the Beijing Platform of Action, the Millennium Development Goals, and Commonwealth Plan of Action on Gender and Development. Some of these have been responsible for initiating and operationalizing national policies that aim at mainstreaming gender at local levels. The gender components in the millennium development goals are therefore based on CEDAW and Beijing initiatives.

### **2.3 Integration of Gender Concerns in Forest Conservation**

Impoverished women groups in Thailand rely on forest resources for their income (IUCN, 2008). Their counterparts in Burkina Faso have a higher direct dependency on forests and other natural resources for their daily livelihoods. Studies indicate that forests contribute more to the income sources of women than that of men. The difference between income dependency on forests is 50% for women while that of men is 5% lower in poorer families. More affluent families stand at 44% for women and 38% for men (IUCN, 2009). Women's

domestic roles in the home make them the primary home keepers and tenders of family vegetable gardens. Forests, therefore, provide them with a diverse variety of ingredients to flavor their meals and for sale (FAO, 2011).

In Salvatierra, Bolivia, men are predominantly hunters and reclaim forest lands for farming while women are gatherers and home keepers (Cifor, 2004). Wild bushes provide food plants, medicinal roots, shoots and roots, and seeds for propagating trees for fruit and shade. Women in Mexico are also gatherers (Cabrera et al., 2001); and in villages in Turkey forests provide significant raw materials for medicine and weaving industries for a sample of the women population (Torksoyet *al.*, 2010).

While women usually use dead and fallen twigs for fuel, men would rather chop down entire trees to sell as firewood or for construction (Hannan, 2002). Wood is primarily for heating and cooking. Non-timber forest products (NTFPs) also play important socioeconomic roles. In Cambodia, men collect resin for sale while women use bamboos to supplement their diets (Conservation International, 2008). In Benin and Cameroon, women can increase their disposable income during times of increased need by increasing the amount of NTFPs they collect so that they have more surplus to sell. Times of increased need include times children reopen schools, to cover medical bills, and during years with poor harvests (Schreckenberget *al.*, 2002).

Sell of NTFP is a major source of income for impoverished households in South Africa and Cameroon (Shackletonet *al.*, 2007). In many societies, women depend more heavily on forest resources for their supplemental incomes than. Their male counterparts often have more income generating options. The women of the Akan people of Ghana use forest

resources to generate income that they can control since most of family farm revenues is controlled by the man of the house.

Forest resources also play an important role in health and wellness. Woodlands provide people with recreation areas where they can exercise or take therapeutic walks (O'Brien *et al.*, 2010; Carter and O'Brien 2008). Studies have shown that they are especially effective in enhancing the mental health wellness of poor and minority communities. These groups have a relatively higher susceptibility to mental health and cardiac problems. Increasing women's access to such facilities significantly increases the psychosocial wellness. More women need to be encouraged to use woodland recreational facilities which can be done by promoting more activities like yoga and Pilates. Increasing safety of parks can also encourage more women to use such facilities. The fear of being attacked or molested can deter many women from going to woodland parks especially if they have young children or are minorities (Morris, *et al.*, 2011).

Gender mainstreaming in Nepal and India helped create sustainable community management policies for communal forests that have increased responsible exploitation of these resources. They have also increased local participation in conservation processes (Agarwal 2009, 2010a). Their inclusion further increased policing and reporting of illegal logging since they are more attentive than their male counter parts.

Gender mainstreaming has greatly increased the participation of marginalized communities in forest conservation (Agarwal, 2009;2010). Cooperation and integration has resulted in increased power of locals in the use and preservation of their resources (Colfer, 2005a; 2005b).

The forestry industry employs more than 42,000 people and directly supports more than 2 million households in the country (FAO, 2011). In Ghana, 70% of families directly rely on the industry for their daily subsistence (GPRS, 2008). Ghanaians also derive game meat, medicine and food plants in addition to the carbon fuel from twigs and sticks.

Without total inclusion of all stakeholders, results cannot be useful in developing comprehensive and sustainable strategies on forest planning and equitable resource allocation (FAO, 2007; PRB, 2001). Also, an interdisciplinary approach ensures that the results can be applicable in more settings and situations (Hovorka, 1998).

There are three significant factors that encourage the integration of women in decision making. First, the provision of certain benefits encourages participation. Second, more women will take such challenges and responsibilities if they have a cordial relationship with the men around them. Last, the society must be progressive enough to encourage women involvement in leadership (Nuggehalliv & Prokopy, 2009). Participation should also be progressively monitored and evaluated to encourage more female participation (Giri&Darnhofer 2010a). Women are further more inclined to participate in leadership roles when there are relatively less men to fill those roles (Djoudi&Brockhaus, 2011; Giri&Darnhofer, 2010b). Religion and wealth have also been identified as significant promoters of equality and gender inclusion (Jewitt, 2000).

Different strategies have proven effective in encouraging gender mainstreaming. First, increased awareness has increased women participation in meetings and conferences encourages them to actively participate and voice their ideas (Agarwal, 2001; 2010a, 2010b). Second, mixing men and women in the same congregations inspires higher levels of

integration (Agarwal, 2001). Third, trainings to increase women's capacity are effective in encouraging their participation and inclusion in decision-making. Last, it is important to acknowledge that there are some women that might not want to take part in active leadership role and forcing them might have severe negative overall effects (Jewitt, 2000).

## **2.4 Integration of Gender Experience in Forest Conservation**

Women across the globe have higher knowledge in plant and tree species than their men counterparts (Merétikaet *al.*, 2010). They are more avid at identifying and differentiating between edible and non-edible plants as well as which ones are good for treating different ailments and conditions. Their experiences have also allowed them to know how to combine different plants to come up with other useful substances like moisturizing soaps for infants (Dan Guimboet *al.*, 2011).

Women are significantly disenfranchised in land ownership in many parts of the world (FAO, 2008). In those progressive societies that recognize women's rights to land and property ownership, trees are still considered as the property of the patriarch of the household (Schreckenberget *al.*, 2002).

Many studies have shown that NTFPs have been effective in reducing wealth allocation bias (Fu *et al.* 2009). The incomes from these sources played an important role in rural economies with men and more affluent members of these societies having a higher presence in formal markets (Madiet *al.* 2010). NTFPs formed the primary source of primary income for most women since they did not have access to the more formal markets or other sources of income (Ajoninaet *al.*, 2005; Avocevou-Ayissoet *al.*, 2009; Fu *et al.* 2009, Kanmegneet *al.*, 2007). Trees around communities provided more than just shelter and fruits with

families with more male members having more trees than their counterparts that had fewer male representatives (Shackleton *et al.*, 2008).

Most of the forestry value chained is controlled by men who hold all the factors of production like technology, and have more access to these resources. That is however not to say that women do not make any meaningful contributions to the industry (Ajonina *et al.*, 2005; Quang & Anh 2006). Awono *et al.* (2010) and Perez *et al.* (2002) argued that if women were empowered with the same privileges their male counterparts enjoyed, they would equally thrive in the forestry industry. The over exploitation of forest resources that devastated many woodlands led to the imposition of strict regulations and laws and worked against increasing women participation in the trade (Avocevou-Ayisso *et al.*, 2009; Brown & Lassoie 2010; Madiet *et al.*, 2010).

The factors that go into selecting tree species are however relatively similar in both men and women. Both groups favor breeds that have high yields of fruit or timber. They also look for breeds can be planted closer together to save on the little space they have on their farms. Sheer trees are thus especially popular among many households. Research indicates that species selection is a joint affair in many households. Women play a critical role in the selection of which tree species to plant. The bulk of the work and management however rests on the shoulders of the men in the household especially in West African (Maranz & Wiesman, 2003; Chalfin, 2004). It has been identified that the input from women helps in ensuring the successful management of arboreal resources especially with domestic tree varieties (Carney & Elias, 2006).

Research has indicated that among the Mosse and Gurunsi farming communities of Burkina Faso, inclusive and integrated knowledge systems are used in the management of shear tree populations (Elias, 2010). For years, these people have been improving their shear stock through indigenous farming practices like thinning and cutting poorly developed trees to ensure healthy woodlands. In this way, gender plays a significant role in forest conservation and development.

Diversity in leadership and management of forests plays a key role in forest management and rebuilding woodlands (Medugu *et al.*, 2010). Gender mainstreaming further encouraged more patient and nurturing approaches to forestry related ventures and values. It has also helped communities discover more uses for forests that actively encourage the participation of women in their use and management (Farreras *et al.*, 2005). With significantly higher stakes in these resources, women are able to actively make contributions to the management and development of forest resources (Gurung, 2002).

Fruits are a mainstay of communities in South-East Cameroon due to their high nutritional value and pastime for children. As a result, the Baka women of this area have for long condemned cutting down of trees due to their high food and medicinal potential. They have advocated for the development of forest and woodland areas around their communities with the aim of increasing their say in their management and conservation. Other plants of significant value include roots and wild yams which are a delicacy among these people. they also use a variety of reeds and shoots for basket industries and handicrafts (AchuSamndong, 2009). Their increased participation in management and conservation further protected woodlands from illegal grazing and felling of trees which further improved soil structure and fertility (Agarwal&Chhatre, 2006). This system also proved effective in Nepal where the



presence of women in homesteads significantly increased the number of trees per square area due to increased protection and traditional knowledge in care and nurturing (Agarwal, 2009).

## **2.5 Challenges of Gender Mainstreaming in Forest Conservation**

Some communities across the globe, especially in India, have customs that bar women from spending their free time in the great outdoors. Scholars and practitioners in the field of forests have realized that fighting such cultures can be the missing link between low women participation and high women participation in conservation matters. Active legislations and regulations have been introduced to encourage gender neutrality, such as the Equality Act of six years ago. This law has significantly increased the efficiency of state and non-governmental agencies in achieving higher numbers of women representation in the management and development of wooded areas and forest cover. They have also taken several measures to break down social barriers to the adoption of woodlands. First, through planting different species, they have created less dense forests to enhance security of residents without compromising on the total number of trees planted. Second, they have developed pathways and resting areas inside woodland areas to enhance the free movement of people and their equipment like bicycles and prams or wheelchairs. Third, there are active walking clubs to encourage women whose religions forbid them from venturing out alone like Hindus and Muslims. There are also several initiatives that use woodlands for psychosocial integration and treatment especially in the UK. It has proven especially useful with the integration of immigrant women into their new life in the UK by providing an effective bridge between their new home and their old one.

The UK has seen tremendous shifts in gender roles in the past 2 decades. It is now not uncommon to find men embracing domestic roles and preoccupying themselves with raising children. To take advantage of this rising trend, the Forest service is actively developing activities to encourage these groups to use their woodland facilities. These services have,

and continue to play a tremendous role in ensuring gender mainstreaming in the forest industry. Their efficiency can probably be attributed to the social angle they give policies and strategies especially in the UK. People are more likely to support initiatives they are passionate about and that they feel add value to their lives.

Forestry is however still widely considered a preserve of men in many parts of the world and this perception has posed significant problems to integration of women into its management and development (Lyren, 2006). For this reason, there are relatively more men even in the most lucrative sectors of the industry like saw milling and sale of lumber. In a research carried out in 10 African countries indicated that there were no women in active management positions in the forestry industry (FAO, 2007).

There are several factors that contribute to the low integration of women in the sector. First, they seldom get recognized in socially and professionally which reduces the need for them seeking active management roles (Baral&Heinen 2007). Second, women favor processes with enhanced communication channels that provide regular feedback which the forest industry does not have (Otsyina, 2002). Third, being forced into participation makes women turn away from such roles completely. Many agencies might push women to attend their seminars in a bid to increase their attendance numbers against their will creating a negative perception and turning them off in the long run (Agarwal, 2001). Fourth, the unequal distribution of proceeds is also a major deterrent for women (Agarwal, 2001; 2009; 2010a; Otsyina, 2002). Fifth, cultural norms play a significant role in deterring women from leadership roles by actively discriminating against women like religion, class, and caste (Agarwal, 2010b).

Veuthey and Gerber (2010) demonstrated that men have more control over forest and woodland resources due to their increased control over factors of production. In some areas, like Nigeria, women have unfettered access to fodder and small plants while society strictly prohibits them from trees for fruits and fuel (Adedayoet *al.*, 2010). Howard and Nabanoga (2007) discovered that women required express permission from their husbands before they could plant or harvest trees. Coulibaly-Linganiet *al.* (2009) further discovered that some regulations and laws decreased women participation by limiting any form of exploitation of woodland areas including grazing and foraging.

## **2.6 Kenya's Gender Policy on Forestry and the Environment**

The policy advocates for programs that take into consideration environment and natural resource management issues that concern women, men, girls and boys. The programs also need to provide information that would contribute to environmental protection and conservation. The policy advocates for environmental issues that affect women directly (Republic of Kenya, 2006).

'Gender responsive policies are essential in ensuring that there is consistency in not only legislation as relates to Conventional Biological Diversity, but also the institutionalization of effective protection and use of indigenous knowledge, innovations and practices of women's bio-diversity'(Republic of Kenya, 2006).

The Government realizes that certain environmental issues have specific relevance to women. This could be through the negative effects of some environmental concerns which could have adverse effects on the female population or some special skills and knowledge women could possess in resolving environmental problems. The policy also recognizes that

at the subsistence level, women are the main users of domestic energy. It advocates for the use of energy efficient stoves and the modernization of power systems. This would not only go a long way in conserving the environment but would also ease labor and save on time for the women. The policy further advocates the government's inclusion of women in decision making processes on policies, economic instruments and appropriate infrastructures to ensure access to adequate water. There is the realization that there is a strong link between gender relations, poverty, the environment and development. This therefore calls for the integration of demographic and gender factors into environment impact assessments and other planning and decision making processes to achieve sustainable development through (Republic of Kenya, 2006) through:

- Promoting and replicating women's knowledge on resource utilization.
- Involving national and local women CBOs in environmental education and conservation programs.
- Evaluating development policies and programs in terms of environmental impact and the resulting gender differences relating to access and use of natural resources.

Overall, the policy has good statements of intent, but is grossly inadequate in terms of strategic actions that can evidence application of a gender policy.

## **2.7 Critique and research gap**

Studies have been conducted in other countries on gender mainstreaming in forest conservation. Nuggehalliv & Prokopy, (2009), studied factors that encouraged women's participation included the following: Concrete benefits, free interaction between men and women and social norms that do not discriminate against women's involvement in decision

making. Similarly, Mosse and Gurunsi (2008) established that agriculturalists in Burkina Faso's province of Sissili in 2006-2007 reveals that this is a grave omission as gendered indigenous knowledge systems mediate the management and conservation of shear trees. Farreraset *al.*, (2005) O focused on institutional issues such as the influence of gender in the formation of forestry-related values in ecosystem goods and services. (Gurung, 2002) conducted a study on strategies to enhance gender mainstreaming in forestry agencies, while Meduguet *al.*, (2010) highlighted the importance of involving women in diverse programs and projects such as afforestation to combat desertification. The above studies indicate a critical role played by women in forest conservation. Despite above benefits of gender mainstreaming in forest conservation, Few studies have been conducted in Kenya on the influence of gender mainstreaming in forest conservation, an particularly in Eastern block of mau forest complex. This study therefore seeks to fill this knowledge gap.

The focus on gender in community forestry reflects the trend towards devolution and decentralization in forest management over the past 10 years. In developing countries, particularly South Asia, researchers have shown that women's participation can enhance forest sustainability. Building on their findings, they are testing the effects of critical mass on women's effectiveness in decision making. Still, gaps in research remain, including the following issues:

- Types of governance that enable more women to make decisions (Acharya& Gentle, 2006).
- Distribution of responsibility, benefits and information between men and women in mixed groups.

- Implications of reforms on women's rights to trees and forest resources and, ultimately, on the security of their rights and access.
- Relative roles and contributions of women and men with respect to collective action and any constraints in forestry settings.
- Incentives to improve implementation of gender-sensitive policies in both the formal forestry sector and civil society organizations.

## **2.10 Summary**

Integration of gender into forestry still faces several constraints: the broad perception that forestry is a male-dominated profession, lack of clarity among researchers about the concept of gender; and a lack of technical skills, interest and/or awareness of gender. Yet a point raised by earlier researchers continues to resonate: researchers must address gender power relations and dynamics in addition to collecting sex-disaggregated data. Clearly, in this inter-connected global setting, what's required is a framework for systematic investigation of the complexities underpinning women's rights and access to forests, as well as their participation in forest decision making and benefits.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter presents research design, area of study, target population, sample size, sampling procedures, data collection instruments, validity and reliability of research instruments, data collection procedures and data analysis procedures.

#### **3.1 Research Design**

This study employed descriptive survey research design. In carrying out this, both quantitative and qualitative research approaches were used. These approaches were chosen because satisfactory responses to some research questions were only possible with the use of both approaches. Data from quantitative methods were corroborated with data generated through qualitative methods. The qualitative approach instruments that were employed for gathering data included semi-structured interviews, focus group discussion and personal observation. For the quantitative approach, the instrument which was used was primarily questionnaire. The researcher relied on the review and legal analysis of Kenya's forest-related statutory texts, cases and critical review of relevant secondary literature. Both qualitative and quantitative approaches were helpful in generating primary data which was used in bolstering or refuting data derived from literature review to realize the research objectives.



### 3.2 Study Area

The area of study was the Eastern block of Mau Forest Complex, the largest forested area in Kenya (over 400,000 hectares) and is the most important source of water for most areas around the country, feeding into Lakes Victoria, Nakuru, Turkana, Baringo and Natron. It supports some of the most important national wildlife reserves including the Maasai Mara National Reserve (Kenya) and the Serengeti National Park (Tanzania) (GOK, 2009). The area which was visited was selected with consideration of the distance to the Eastern Block of Mau forest Complex. In the recent past, the Mau Complex has come under increasing pressure for losing an estimated 25 percent of its forest area through encroachment and excision of forest lands, and is now experiencing significantly diminished river flows that threaten not only the existence of the parks and reserves but also loss of biodiversity.

The Eastern Block of the Mau Forest Complex is the largest closed-canopy montane ecosystem in Eastern Africa. It encompasses seven forest blocks within the Mau Narok, Maasai Mau, Eastern Mau, Western Mau, Southern Mau, South West Mau and Transmara regions. This study therefore was conducted in the Eastern Mau Forest block. The upper area of Eastern Mau Forest Reserve is a biodiversity hotspot. Based on altitude range, vegetation cover type and rainfall, it forms a critical habitat for some species that are of conservation significance. These are *Cisticolaaberdare* (with a restricted altitude range of between 2400 and 2700 metres a.s.l), Yellow backed and Blue duikers which are classified as rare in East Africa and the Giant forest hog which is globally threatened.

The Eastern Block of the Mau Forest Complex presented a perfect site for the study because of the increased degradation of its forest cover in the recent past and more importantly

because measures to stop and restore the forest have proven futile. A closer look at the problem of the Mau Forest Complex in terms of restoration and implementation of programs reveals that lack of gender mainstreaming in initiatives and programs is the main problem. Stakeholders have for a long time down looked upon the role of women in the restoration programs and those that have tried to involve women have done so halfheartedly. In addition, the inhabitants of the Mau Forest Complex and its environs are the Kipsigis sub tribe who are among the leading sub tribes in terms of women subjugation (Gurung&Quesda, 2009). In addition, all initiatives that have in the past done in the area have not taken women seriously or are given minor roles. This is why this area was chosen for this particular study.

### **3.3 Target Population**

The target populations for this research were 240 households who live around the area of the study. This population was best place to provide information that answered the research questions. Management institutions and key informants were contacted to supplement the information gathered in the field as well as to clarify formalities and relations present in different villages. Management institutions provided important information regarding how initiatives have been done in the past around the complex.

The target population for this research was the local forest community around Mau Forest Complex who obtained their living from this forest landscapes. They were expected to shed light on the intricate factors that inform their decision-making process in the use and possible misuse of forest resources. For these people residence in or around Mau Forest Complex was the major criterion regardless of their professed occupation whether it was

farming, charcoal manufacturing or any other activities. In practical terms, all residents living about two hundred meters from the forest buffer zone were the potential respondents together with those settled inside the forest reserve.

Although the official buffer zone is 25 meters from the reserve boundary, it was felt that those within two hundred meters of the forest reserve were close enough to have an impact or be impacted by the forest reserve. In principal, all people living within this perimeter of Mau forest Complex will be potential respondents.

The traditional authorities such as two chiefs and three forest officers provided answers to the research questions. This comprises representatives of public and private institutions whose activities are related to forestry, land and the environment as well as the actual users of forestry products.

### **3.4 Sampling Techniques and Sample Size**

The target group for this research was selected on the basis of the research questions formulated. The actual respondents in these settlements were picked randomly mainly based on availability and willingness to be interviewed.

This sample size conformed to the formula (Krejcie & Morgan, 1970) used to determine the sample size of a finite population.

$$S = \frac{X^2NP(1-P)}{d^2(N-1) + X^2P(1-P)}$$

Where:

- S = Required Sample size
- X = Z value (e.g. 1.96 for 95% confidence level)
- N = Population Size
- P = Population proportion (expressed as decimal) (assumed to be 0.5 (50%))
- d = Degree of accuracy (5%), expressed as a proportion (.05); It is margin of error

$$\frac{1.96^2 * 240 * 0.5 * 0.5}{0.05^2(240 - 1) + 1.96^2 * 0.5 * 0.5} = 147.95$$

However, the actual sample size was 139 in view of the resource and logistical limitations.

**Table 3.1 Sampling Frame**

| <b>RESPONDENTS</b> | <b>TOTAL</b> | <b>SAMPLE SIZE</b> | <b>%</b> |
|--------------------|--------------|--------------------|----------|
| Households         | 240          | 134                | 55.8     |
| Chiefs             | 5            | 2                  | 40       |
| Forest Officers    | 8            | 3                  | 37.5     |
| <b>Total</b>       | <b>253</b>   | <b>139</b>         |          |

**Source: Researcher**

The sample size met the basic threshold of 30%, which is necessary to carry on with the research according to Mugenda, 2003.

### **3.5 Data Collection Procedures**

A reconnaissance visit was made in the study area with the purpose gaining acquaintance with the area and people, testing the semi-structured interviews and guidelines, testing the assistants and enumerator competence, identifying key informants and gathering groups together. Two assistants, one enumerator and the researcher shared the task of conducting household interviews and group interviews. The researcher, together with the enumerator, was the only ones who conducted key informant interviews. At the end of the day, the group discussed the collected interviews for possible clarifications. The criterion for selecting the assistants was based on their background: education, language and local knowledge.

Collection of household information and management information was carried out. The primary data for this research was obtained through key informant interviews and semi

structured household interviews, and observation. Secondary data were conducted through reading policy documents and literature reviews. These were collected from among the Forest Department, NEMA and NGOs present in the area, as well as relevant literature found through the library of Kisii University.

In the second phase, the researcher sought permission from the relevant authorities to conduct the study. The researcher applied for a research permit to the National Commission of Science, Technology and Innovation. The third phase was the actual collection of data, the researcher booked an appointment with the relevant subjects to be interviewed and distributed the questionnaires with the aid of two research assistants.

### **3.6 Data Collection Techniques**

The researcher used questionnaires, interviews and focus group discussion as the main tools for collecting data. The selection of these tools was guided by the nature of data to be collected, the time available as well as by the objectives of the study.

#### **3.6.1 Questionnaire**

Gay (2006) explains that descriptive data are usually collected using questionnaires. This study adopted both the open ended and closed type of questionnaires; the researcher in person administered the questionnaires.

### **3.6.2 Interviews**

According to Cohen and Manion (2008) interviews are crucial instruments of data collection in descriptive research. The researcher employed the use of interviews on respondents whose literacy level could not allow them to respond to questions in the questionnaire. Interviews were also used to collect in-depth information that could not be captured using questionnaire.

### **3.6.3 Focus group discussion**

Focused group discussion was done mainly focusing on the key informants. This included herberlist, those people who have been issued with permits to carry out various activities in the forest such as; grazing of cows, farming, firewood collection and logging. This gave the researcher first hand information on their experience with the forest officials.

### **3.7 Piloting**

Kombo and Tromp, (2006) argue that a pilot study helps to test the feasibility of the study techniques and to perfect the questionnaire and interview, concepts and wordings. It was carried out in Mt. Elgon Forest in a different Zone which has similar characteristics. Piloting was done to establish whether the instruments could be used to collect relevant data, identify any problems likely to occur at the time of actual data collection process and to also check whether the instructions in the questionnaires was understood by the respondents.

It was found out in the pilot phase that gender mainstreaming is necessary in forest conservation because women provides a supporting role in the conservation process and that conservations which mainstream gender are sustainable and effective. These findings proved that the study tools were effective and some questions needed a little alteration in terms of

wordings. Specifically, the ones which sort to know about the cultural barriers were hard for the respondents to understand. The items were revised with the help of the researcher's supervisors from the Faculty of Arts and Social Sciences, Kisii University.

### **3.8 Validity and Reliability of Research Instruments**

The researcher took into serious consideration the aspect of validity and reliability to ensure that they were as required.

#### **3.8.1 Validity of Instruments**

The questionnaire items were formulated around aspects of the problem being investigated in order to maintain consistency and relevance to the problem. The researcher analyzed the content and objectives of the study in detail to ensure that they are representative of a universe of items to be investigated. In this study, the researcher was guided by the general concepts of validity. Lecturers and supervisors in the faculty of Arts and Social Sciences at Kisii University confirmed that the items would solicit the required information. The comments and suggestions of Kisii University lecturers and supervisors were used as a basis to modify the items and make them more adaptable to the study so as to improve the validity of the instruments. In order to ascertain face validity of the questionnaire, the researcher ensured the format of the questions was attractive to respondents, and the questions formulated were made short and to the point. The questionnaire had also reasonable number of pages.

### 3.8.2 Reliability of Instruments

Mugenda and Mugenda (1999) observe that reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials. This, therefore, means that it is the dependability or trustworthiness of the research instrument to consistently yield the same data under similar conditions. To test internal consistency of the research tools in this study, the test-retest method was used. The draft questionnaire was administered to ten residents and then re-administered to them again after two weeks. The researcher used the Pearson Product Moment formula to calculate the coefficient of the correlation in order to establish the extent to which the items in the questionnaire were consistent in eliciting the same responses every time they were administered. Best (2005) argued that if the coefficient of reliability is greater than 0.60 then the instrument is reliable. The inter-item reliability of the questionnaires was also determined by using the split-half reliability method. The instrument was administered once to a pilot group of participants from Mount Elgon forest neighborhood and then the results of the items were divided into two groups (halves) where the odd numbered items formed one group and the even numbered items formed another group. The correlation between these two groups of scores was computed using Pearson Product Moment Correlation ( $r_{1/2}$ ) method, reliability of 0.74 was obtained, which indicated that the instruments were reliable. The reliability of the full instrument was calculated using Spearman's Brown formula and which conformed to the basic threshold.



**Table 3.2 Reliability Analysis**

| <b>Objective</b>                                                                                                                              | <b>Cronbach's Alpha</b> |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| To establish the extent of integration of gender specific concerns in the implementation of forest conservation in Mau Forest Complex, Kenya. | <b>0.56</b>             |
| To evaluate the contribution of gender specific experiences in the implementation of forest conservation in Mau forest complex.               | <b>0.81</b>             |
| To analyze the challenges to gender mainstreaming in forest conservation in Mau Forest Complex                                                | <b>0.87</b>             |
| <b>Weighted alpha</b>                                                                                                                         | <b>0.74</b>             |

**Source: Field Data (2016)**

### **3.9 Data Analysis and Presentation**

After all the information had been collected, it was compiled, processed and analyzed. Data collected separately from men and women were analyzed in a gender-disaggregated manner to bring out the relationship between them and enable a comparison and interpretation of their activities. All statistical data were analyzed using computerized software, SPSS to minimize errors and make the process faster. Qualitative data were analyzed using content analysis where the response were summarized based on themes and presented inform of statements. Quantitative data were presented in tables and figures.

### **3.10 Ethical Considerations**

Kombo and Tromp (2006) argue that researchers whose subjects are people or animals must consider the conduct of their research and give attention to the ethical issues associated with carrying out their research. Ethical issues such as confidentiality, responsibility, informed consent, honesty and openness in dealing with other researchers and research subjects, physical and psychological protection, and explanation of the purpose of the study and ‘de-briefing’ subjects afterwards should therefore be considered. The rights of informants or participants in this study were being protected by all means. The principle of voluntary participation was encouraged and participants were not coerced into participating in the study. Participants in the study were first supposed to consent to participation after being fully informed about the procedures to be taken in the study. Those participating in the study were not put in a situation that could endanger them whatsoever. Harm can be defined as physical, psychological and emotional. There were two standards that were applied in order to help protect the privacy of research informants. The researchers also guaranteed the informants confidentiality. Anonymity of the participants was maintained by asking them not to disclose their names in any of the research instruments. They were also assured that the information provided would not be made available to anyone who is not be directly involved in the study.

## **CHAPTER FOUR**

### **DATA ANALYSIS, INTERPRETATION AND DISCUSSION**

#### **4.0 Introduction**

This chapter discusses the analysis, presentation, interpretation and discussion of data collected. The main purpose of his study was to assess the influence of gender mainstreaming on implementation of forest conservation in the Eastern block of Mau Forest Complex. The data analyzed was obtained through interview guides, questionnaires and focus group discussions and which was later presented in form of tables and charts. The respondents were mainly households, chiefs and forest officers from Eastern block of Mau Forest Complex in Kenya.

#### **4.2 Response Rate and data screening**

Out of 134 administered questionnaires, 122 questionnaires were received from the field which translates to 91.04%. Responses from the chiefs and forest officers were also collected and thus all questionnaires which were ready for analysis totaled to 127. This translated to 91.37% response rate after screening the data because 120 questionnaires were fit for analysis.

#### **4.3 Socio-demographic characteristics of respondents**

Among the information gathered was; gender, period stayed, occupation and motivators of settlement in Mau.

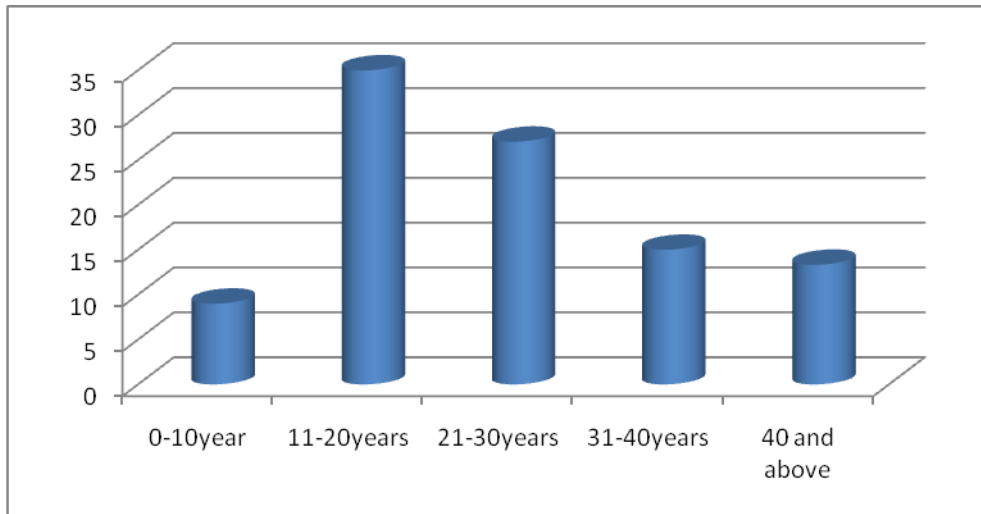
### **4.3.1 Gender of Respondents**

To find out the above variable, respondents were supposed to indicate in the administered questionnaires their respective genders. The results were as follows: 34 (28.33%) of the total respondents were female while 86 (71.67%) were male. As found out through focus group discussion and observation, the reason for the gender imbalance was because most of the respondents were migrants who had migrated from other parts of the country to look for land and other resources from the Complex. And as it usually is the culture of the Kalenjins, it is the men who take the risk. In addition, culture contributed to the less number of female respondents because Kalenjins do not allow their women to participate in public events. This finding confirmed the findings of the study done by Njogu et al. (2013) that culture played a role in the low turn up of female respondents among Kalenjins in public events.

### **4.3.2 Period of stay in MAU by the Respondents**

For this research the period of stay was the key in determining the suitability of the respondents for the study and in giving the required data. The period of stay varied and the researcher clustered them as follow: 0-10 years, 11-20 years, 21-30 years, 30-40 years and more than 40 years.

The compositions of the above clusters were as follows:



**Figure 4.1**Period of stay in MAU

(Source: Author, 2016)

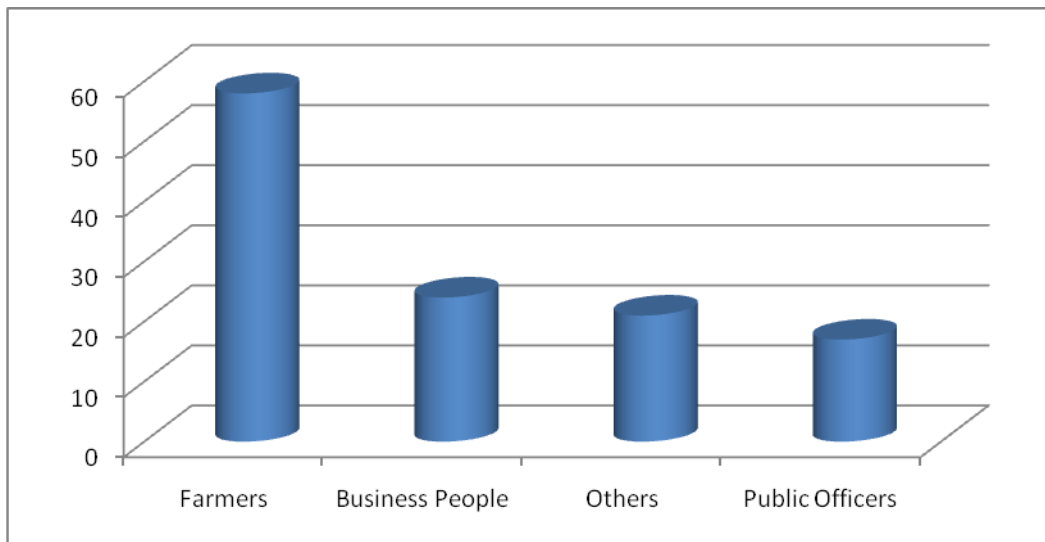
The findings from Figure 4.3.2 above, 11 (9.0%) of the total respondents had stayed between 0-10 years, 18(15%) had stayed between 11-20 years, 42 (35%) had stayed between 21-30 years, 33 (27.05%) had stayed between 31-40years while 16 (13.33%) had stayed for a period more than 40years.

The findings on the above figure show that most respondents had stayed for between 11-30 years, making a total of 50% of the respondents. These findings imply most of the respondents had stayed for a long period enough to understand and articulate the issue under study appropriately. The spread of the ages from zero to 40 also showed that the respondents were dynamic enough to elicit different point of views necessary for the study.

The findings above adhered to the recommendations of a study by Boakye&Baffeo (1994) that the best study population for implementation of forest conservation programs are those who had stayed for a period longer than ten years because they understand the dynamics of their environment adequately.

### 4.3. 3 Occupation of Respondents

Kadeba (2010) argue that the respondent's occupation influences them answering research questions. The following is the analysis of occupation of the respondents. The figure 4.2.3 below illustrates the occupation of respondents.



**Figure 4.2: Occupation of Respondents**

(Source: Author, 2016)

The finding shows that majority of respondents were farmers 58 (48.33%). Public officers were the minority at 17 (14.17%), business people were 24 (20%) while the other professionals were 21 (17.5%).

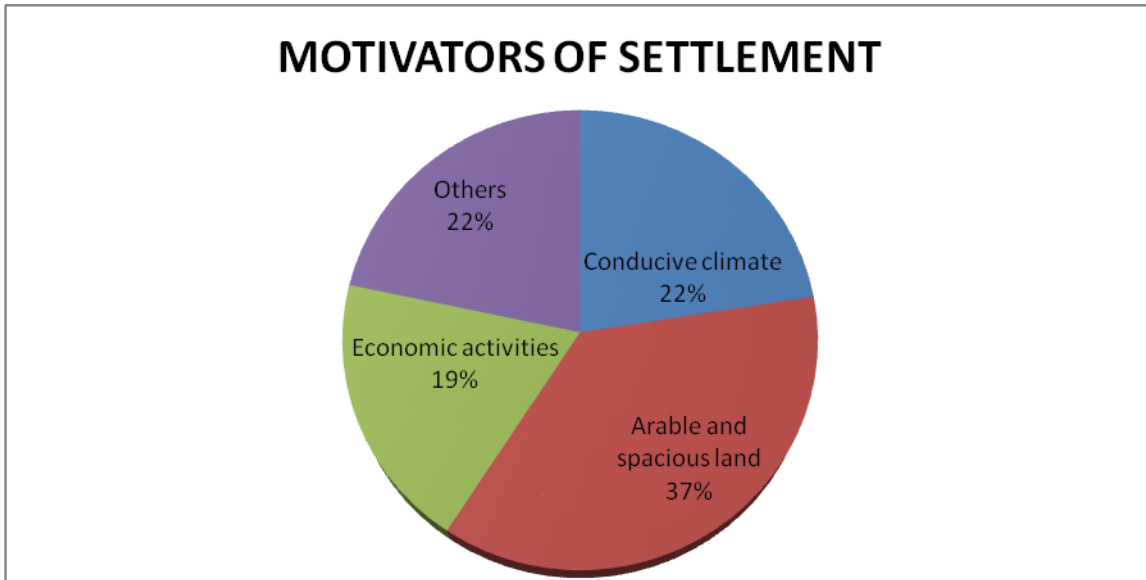
From the findings, it is clear that most of the respondents were farmers and business people. Most of the farmers did farming in forest land or adjacent lands while business people dealt with farm produce from forest land. According to Kalumba (2008), farmers possess valuable

experiences and knowledge about the environment such that policy maker should from time to time consult them while seeking to implement conservation programs. The findings from this study shows that most of the respondents were farmers and as such were fit for the study because they were in a position to give the required data. In addition, the implications of the findings above were that the respondent's responses would be representative and could be generalized to suit another area

#### **4.3.4 Motivators of settlement**

To determine the above variable, respondents were supposed to indicate their motivation to settling in Mau. Their responses were as follows:

37.0% of the respondents settled in Mau because the land is spacious and arable to accommodate more settlement, 22.0% said that they settled in Mau region because it had conducive weather and climatic conditions, 19.0% of respondents believed that they were motivated to settle in Mau because of economic activities. The remaining 22.0% of respondents gave various reasons as to why they settled in Mau.



**Figure 4.3 Motivators of settlement**  
(Source: Author, 2016)

These findings indicated that most of the respondents were motivated by the space in the forest and therefore were suitable for the study in providing valuable information



#### **4.4 Descriptive statistics on specific objectives**

##### **4.4.1 Integration of gender specific concerns in the implementation of forest conservation**

The first objective of this study was to establish the extent of integration of gender specific concerns in the implementation of forest conservation in Mau Forest Complex, Kenya. The researchers focused on the way gender concerns have been mainstreamed in implementation of forest conservation these areas of concern include the following:

- i. Collect firewood
- ii. Fetch quality water
- iii. Collect herbs
- iv. Collect foodstuffs
- v. Cut Timber
- vi. Use forest land for cultural activities

The above concerns are part of policy of forestry conservation and the researcher focused on how both genders (male and female) were given permits to undertake the above activities in the forest by Kenya forest service and area chiefs. The results were recorded as follows:

##### **4.4.1.1 Collecting Firewood**

To establish the contributions, experiences and whether gender mainstreaming was necessary in implementation of forest conservation in Eastern Block of Mau Forest, respondents were supposed to indicate their level of agreement or disagreement in the administered questionnaires. The results were as follows:

**Table 4.1 Collecting Firewood**

| Variables              | R   | ST   | A    | I    | D   | SD  | M   | SD   |
|------------------------|-----|------|------|------|-----|-----|-----|------|
| Collection of Firewood | 120 | 31.3 | 43.4 | 19.3 | 2.4 | 3.6 | 4.0 | 0.97 |

Source: Field Data (2016)

R-Respondents ST-Strongly Disagree A-Agree I-Indifferent D-Disagree SD-Strongly Disagree M-Mean SD-Standard Deviation

As shown in the table above, 74.7 % agreed and strongly agreed that indeed both genders were issued with permits to collect firewood meaning that both genders understood the dynamics of forest and by extension had experience to participate in forest conservation activities. The standard deviation in the responses of the respondents was 0.97 meaning that the findings conform to the objective of the study.

This was also a confirmation of the concerns raised by a number of literatures on this topic that gender mainstreaming was necessary in implementation of forest conservation. As Jewitt (2000) in his study puts it, gender mainstreaming in implementation of forest conservation is a must and stakeholders will ignore at their own cost.

#### **4.4.1.2 Fetching Water**

To establish the contributions, experiences and whether gender mainstreaming was necessary in implementation of forest conservation in Eastern Block of Mau Forest, respondents were supposed to indicate their level of agreement or disagreement in the administered questionnaires. The results were as follows:

**Table 4.2 Fetching Water**

| Variables         | R  | ST   | A    | I    | D   | SD  | M   | SD   |
|-------------------|----|------|------|------|-----|-----|-----|------|
| Fetching of water | 28 | 20.5 | 61.4 | 13.3 | 3.6 | 1.2 | 4.0 | 0.77 |

Source: Field Data (2016)

R-Respondents ST-Strongly Disagree A-Agree I-Indifferent D-Disagree SD-Strongly

Disagree M-Mean SD-Standard Deviation

The results above showed that women were in agreement that they were the ones who were responsible for fetching water from the forest and as such understood the importance of the forest in terms of being a source of clean water. The deviation was insignificant meaning that most female respondents were in a good position to assist in implementation of forest conservation because they were better positioned to know the importance of conserving forests.

Study done by IFUW (2004) found out that women understood the value and importance of conserving forests in as much as clean water is concerned. Thus, the findings pointed out to the positive influence gender mainstreaming would play in implementation of conservation programs of Mau forest.

#### **4.4.1.3 Collecting Herbs**

Through the administered questionnaires, respondents were supposed to indicate their level of agreement and disagreement as to whether both genders participated in collecting herbs from the forest. The results were as follows:

**Table 4.3 Collecting herbs**

| Variables           | R   | ST   | A    | I   | D   | SD | M   | SD   |
|---------------------|-----|------|------|-----|-----|----|-----|------|
| Collection of Herbs | 120 | 39.4 | 32.2 | 1.8 | 2.6 | 24 | 4.8 | 0.97 |

Herbs

Source: Field Data (2016)

R-Respondents ST-Strongly Disagree A-Agree I-Indifferent D-Disagree SD-Strongly

Disagree M-Mean SD-Standard Deviation

The results showed that 39.4 % of the respondents strongly agreed, 32.2 % agreed while 24 % and 2.6 % disagreed and strongly disagreed respectively. The indifferent respondents were 1.8 %. There were no much deviations as the standard deviation was 0.97 showing that responses were within the accepted standard to conclude that the agreement was unanimous.

Collecting of herbs was not only a both gender affair but it showed that both genders had adequate knowledge of the type of trees and their usage. This is a strong indication that gender mainstreaming in implementation of forest conservation in Mau would bring about positive influence based on the assumption that knowledge of trees is a necessary component in implementation of conservation programs. As Howard (2003) found out, knowledge of trees played a crucial role in anything to do with forest conservation.

#### **4.4.1.4 Collecting foodstuff**

The above variable was supposed to show the extent to which both genders used the Eastern block of Mau Forest Complex. The respondents were supposed to indicate their level of

agreement and disagreement regarding their use of the forest. The results were tabulated as follows:

**Table 4.4 Collecting foodstuff**

| Variables               | R   | ST   | A    | I    | D   | SD  | M   | SD   |
|-------------------------|-----|------|------|------|-----|-----|-----|------|
| Collection of Foodstuff | 120 | 24.1 | 57.8 | 15.7 | 1.2 | 1.2 | 4.0 | 0.75 |

Foodstuff

Source: Field Data (2016)

R-Respondents ST-Strongly Disagree A-Agree I-Indifferent D-Disagree SD-Strongly

Disagree M-Mean SD-Standard Deviation

According to the results shown above, respondents overwhelmingly agreed 81.9% that they were allowed to use the forest for collecting of foodstuff. It therefore became apparent that both genders considered the forest a source of their livelihoods. Research showed that human beings would do anything within their means to protect their sources of livelihoods (Iyassa&Okenye, 2010). This meant that mainstreaming gender in implementation of forest conservation in Mau would yield positive influence because both genders understood the importance of conserving the forest, and would participate in implementation of conservation initiatives.

#### **4.4.1.5 Cutting Timber**

To find out the feelings and thoughts of the respondents regarding the above variable, questionnaires were administered to respondents who were supposed to express their level of

agreement and disagreement on whether the KFO issued them with permits. The results were tabulated as follows:

**Table 4.5 Cutting Timber**

| <u>Variables</u> | <u>R</u> | <u>ST</u> | <u>A</u> | <u>I</u> | <u>D</u> | <u>SD</u> | <u>M</u> | <u>SD</u> |
|------------------|----------|-----------|----------|----------|----------|-----------|----------|-----------|
| Cutting timber   | 120      | 45.8      | 2.8      | 18.1     | 1.3      | 32        | 4.0      | 0.73      |

Source: Field Data (2016)

R-Respondents ST-Strongly Disagree A-Agree I-Indifferent D-Disagree SD-Strongly Disagree M-Mean SD-Standard Deviation

The responses showed that respondents agreed and disagreed on almost at the same degree, 48.6 % agreeing, 18.1% being indifferent and 33.5% disagreeing. This was a clear indication that in terms of KFO issuing permits to cut timber in the forest, there was a gender imbalance. The standard deviation of the responses however, indicated that there were no major discrepancies in the matter. In fact, this situation was also found in the study carried out by Jewitt (2000) that cutting of timber favored men compared to women. It also emerged in the focus group discussion that there were major corruption issues surrounding issuance of permits to cut timber, whereby forest officials took advantage of their positions to do business. All in all, the findings indicated that the all respondents were in a good position to participate in implementation of conservancy programs, and integration of gender specific concerns was above bar.

#### **4.4.1.6 Use of forest land for cultivation**

Use of forest land for cultivation was one of the variables for determining gender specific concerns for this study. Specifically, use of forest land among both genders was assumed to

elicit among other things sensitivity with which careless use of forest land for farming could bring about. To determine the feelings and experiences of both genders with regard to this issue, questionnaires were issued to respondents who were expected to express their level of agreement in the use of forest land. The results were as follows:

**Table 4.6 Use of forest land for cultivation**

| <u>Variables</u>   | <u>R</u> | <u>ST</u> | <u>A</u> | <u>I</u> | <u>D</u> | <u>SD</u> | <u>M</u> | <u>SD</u> |
|--------------------|----------|-----------|----------|----------|----------|-----------|----------|-----------|
| Use of forest land | 120      | 45.8      | 32       | 18.1     | 1.3      | 2.8       | 4.0      | 0.73      |

For cultivation

Source: Field Data (2016)

R-Respondents ST-Strongly Disagree A-Agree I-Indifferent D-Disagree SD-Strongly Disagree M-Mean SD-Standard Deviation

The results in the table above showed that the respondents agreed to use forest land and as such knew the consequences that could come about overusing of forest land for cultivation. Thus, it was clear that mainstreaming gender in implementation of forest conservation programs would bring about positive influence. This was also found out by the study of Howard (2003) that the best people to implement conservation of forest programs were those who are involved in its destruction. In this case, both genders played a role in the use of land for cultivation, and mainstreaming gender in implementing conservation programs would yield positive influence.

#### **4.4.2 Contribution of gender specific experiences in the implementation of forest conservation in Mau forest complex**

The second objective of this study was to evaluate the contribution of gender specific experiences in the implementation of forest conservation in Mau forest complex. The researcher focused on the way gender specific experiences influenced the implementation of forest conservation.

This section was composed of four thematic areas; gender specific experiences, conservation knowledge and traditional conservancy knowledge. The researcher sought to establish how gender had been mainstreamed in the above thematic areas and their long run influences on implementation of forest conservation policy in Eastern block of MAU forest.

##### **4.4.2.1 Gender specific experiences and the implementation of forest conservation in Mau forest complex**

Implementation of forest conservation programs successfully was presumed by the study that it required experience, attachment and prospects of future benefits. To establish whether respondents possessed the drivers of implementation, the researcher administered questionnaires in which respondents were supposed to indicate their level of agreement and disagreement regarding access to gender specific needs. The results were as follows:



#### 4.4.2.1.1 Access to clean water and fuel

To determine the extent to which respondents agreed or disagreed on whether they accessed clean water and fuel from the forest and by extension to establish the experience and attachment of the respondents to the forest, questionnaires were administered and respondents indicated their views accordingly. The results were as follows:

**Table 4.7 Access to clean water and fuel**

| <u>Variables</u>                  | <u>R</u> | <u>SA</u> | <u>A</u> | <u>I</u> | <u>D</u> | <u>SD</u> | <u>M</u> | <u>SD</u> |
|-----------------------------------|----------|-----------|----------|----------|----------|-----------|----------|-----------|
| Access to clean water and fuel    | 120      | 54.8      | 25.9     | 13.7     | 2.7      | 2.9       | 4.08     | 0.829     |
| Abundant supply Of water and fuel | 120      | 33.7      | 45       | 17.7     | 1.2      | 2.4       | 4.08     | 0.827     |

Source: Field Data (2016)

R-Respondents  
 S-Strongly Disagree  
 A-Agree  
 I-Indifferent  
 D-Disagree  
 SD-Strongly Disagree  
 M-Mean  
 SD-Standard Deviation

From the table above, it is clear that respondents accepted to have accessed clean water from the forest at 80.7%. This was a strong indication that indeed the respondents and especially women agreed that the forest played a fundamental role in water and fuel supply and as such had the necessary attachment to carry out implementation of forest conservation programs. This confirmed the findings of Wahungu (2014) that women like men had attachment to water sources and would fully participate in initiatives to conserve the sources of water.

#### 4.4.2.1.2 Access to herbal cure

To determine the extent to which respondents agreed or disagreed on whether they accessed herbal cure and abundance of herbal cure from the forest and by extension to establish the experience and attachment of the respondents to the forest, questionnaires were administered and respondents indicated their views accordingly. The results were as follows:

**Table 4.8 Access to herbal cure and abundance of herbal cure**

| <u>Variables</u> | <u>R</u> | <u>SA</u> | <u>A</u> | <u>I</u> | <u>D</u> | <u>SD</u> | <u>M</u> | <u>SD</u> |
|------------------|----------|-----------|----------|----------|----------|-----------|----------|-----------|
| Access to herbal | 120      | 33.7      | 49.4     | 14.5     | 1.2      | 1.2       | 4.13     | 0.793     |
| Cure             |          |           |          |          |          |           |          |           |
| Abundant supply  | 120      | 21.3      | 24.2     | 39.95    | 1.25     | 13.3      | 4.16     | 0.689     |

of herbal cure

Source: Field Data (2016)

R-Respondents  
 S-Strongly Disagree  
 A-Agree  
 I-Indifferent  
 D-Disagree  
 SD-Strongly Disagree  
 M-Mean  
 SD-Standard Deviation

On 100% scale, the level of agreement among respondents was 83.3% and on abundance at 45%. The results were within the normal range of standard deviation of 0.793 and 0.689 respectively. This was an indication that truly mainstreaming gender would influence implementation process positively because respondents were willing to participate to ensure that their source of herbal cure was maintained.

#### 4.4.2.1.3 Access to food

This was also part of variables tested in the study to establish gender specific experiences in implementation. The results after the questionnaires had been filled and analyzed were as follows:

**Table 4.9 Access to food**

| Variables               | R   | SA   | A    | I     | D    | SD   | M    | SD    |
|-------------------------|-----|------|------|-------|------|------|------|-------|
| Access to food          | 120 | 40.5 | 20.6 | 21.1  | 3.2  | 14.6 | 1.09 | 0.002 |
| Abundant supply of food | 120 | 45.7 | 9.09 | 32.02 | 12.1 | 1.09 | 1.09 | 0.002 |

Source: Field Data (2016)

R-Respondents  
 ST-Strongly Disagree  
 A-Agree  
 I-Indifferent  
 D-Disagree  
 SD-Strongly Disagree  
 M-Mean  
 SD-Standard Deviation

Like the rest of the variables, it came out that respondents associated the forest with food and fuel access at 61.1% abundant supply of food and fuel at 78.7%. This indicated that most of the respondents were well aware that the forest acted as a source of food and fuel directly and indirectly. Through researcher’s observation, it was established that that female respondents were well placed to understand how the forest could act as a source of food and fuel. This indicated that females were ready to play part in implementation of forest conservation since they were more attached to it in terms of it being a source of food for their families. Integration of gender mainstreaming and gender specific concerns in implementation would yield better results (Wahungu, 2014).

#### 4.4.1.2.4 Access and abundant supply of farmlands

This variable was supposed to show the extent of the respondent's willingness to protect the farms around the forest. After filling the questionnaires administered, the results were tabulated on a table as shown below:

**Table 4.10 Access and abundant supply of farmlands**

| Variables                    | R   | SA    | A    | I     | D    | SD   | M    | SD    |
|------------------------------|-----|-------|------|-------|------|------|------|-------|
| Access to Farmlands          | 120 | 21.45 | 2.45 | 33.4  | 16.9 | 25.8 | 4.0  | 0.768 |
| Abundant supply of farmlands | 120 | 33.1  | 35.9 | 22.22 | 4.09 | 5.5  | 3.75 | 0.567 |

Source: Field Data (2016)

R-Respondents  
 ST-Strongly Disagree  
 A-Agree  
 I-Indifferent  
 D-Disagree  
 SD-Strongly Disagree  
 M-Mean  
 SD-Standard Deviation

The percentage total percentage of those who strongly agreed and agreed that they had access to farmlands was at 23.9% yet those who strongly agreed and agreed that there was abundant supply of farm lands were at 67%. This showed that in as much as there were abundant farmlands in the forest area, access to those lands was limited. This meant that either the respondents were aware of the consequences of using forest or they denied access and which they were comfortable with. These findings therefore showed that respondents of either gender were willing to cooperate in protecting and conserving forest land and as such would have brought positive influence in implementation, and thus confirming the findings of Ongugo (2010) study.

#### 4.4.1.2.5 Access and abundant supply of cultural issues

To establish whether the community benefited from the forest culturally, questionnaires and short interviews were conducted. The results were as follows:

**Table 4.11 Access and abundant supply of cultural environment**

| Variables               | R   | SA    | A    | I     | D    | SD   | M    | SD    |
|-------------------------|-----|-------|------|-------|------|------|------|-------|
| Access to               | 120 | 34.98 | 20   | 36.82 | 3.6  | 4.6  | 3.45 | 0.375 |
| Cultural environment    |     |       |      |       |      |      |      |       |
| Abundant supply         | 120 | 38.76 | 20.6 | 30.22 | 5.79 | 4.67 | 4.0  | 0.45  |
| of cultural environment |     |       |      |       |      |      |      |       |

Source: Field Data (2016)

R-Respondents  
 ST-Strongly Disagree  
 A-Agree  
 I-Indifferent  
 D-Disagree  
 SD-Strongly Disagree  
 M-Mean  
 SD-Standard Deviation

The level of agreement on whether the forest environment provided the community with a place to practice their cultural things was above average on both accounts. This indicated that the community which practices circumcision used the forest for their activities and would therefore cooperate accordingly in implementation of forest conservation programs (Wahungu, 2014)

#### 4.4.2.2 Gender and decision making implementation of forest conservation in Eastern Block of Mau forest complex

The section sought to find out if both genders were involved and allowed by KFO and chiefs in decision making over issues of implementation of forest conservation. The results were as follows:

**Table 4.12 Decision Making on Afforestation**

| Variables                        | R   | SA   | A  | I    | D    | SD   | M    | SD    |
|----------------------------------|-----|------|----|------|------|------|------|-------|
| Decision Making on Afforestation | 120 | 31.3 | 23 | 21.1 | 2.80 | 1.05 | 3.09 | 0.408 |

Source: Field Data (2016)

R-Respondents  
 ST-Strongly Disagree  
 A-Agree  
 I-Indifferent  
 D-Disagree  
 SD-Strongly Disagree  
 M-Mean  
 SD-Standard Deviation

The results indicated that half the respondents agreed that they were involved in the process of decision making when it comes to implementation of forest conservation programs except in tree harvesting. The results strongly suggested that the forest officials and management did not fully involve the members of the public. It came out quite clearly in the focus group discussions and interviews that women specifically were not involved in the process. These results confirmed the findings of the study done by Eyong and Gerke (2007) who stated that majority of members of public were not involved in decision making on matters of public resources.

#### 4.4.2.2.2 Decision Making on Establishment of Nurseries

To determine this aspect, respondents were supposed to indicate in the administered questionnaires their levels of agreement and the results were as follows:

**Table 4.13 Decision Making on Establishment of Nurseries**

| Variables                                     | R   | SA   | A     | I    | D     | SD | M    | SD    |
|-----------------------------------------------|-----|------|-------|------|-------|----|------|-------|
| Decision Making on Establishment of nurseries | 120 | 45.6 | 26.09 | 21.1 | 16.09 | 4  | 2.05 | 0.456 |

Source: Field Data (2016)

R-Respondents  
 S-Strongly Disagree  
 A-Agree  
 I-Indifferent  
 D-Disagree  
 SD-Strongly Disagree  
 M-Mean  
 SD-Standard Deviation

The results above from the administered questionnaires suggested that the community was involved in establishing tree nurseries. The level of agreement was at 71.15%, thus mainstreaming gender in implementation would have positive influence after all because female and male respondents had prior knowledge. As many studies have found out in the past, prior participation boost the success rate of implementation of forest conservation programs (Kaudia&Obonyo, 2007).



**Plate 1: Establishment of nurseries by both genders**

Source: Kenya Forest Service Website

#### 4.4.2.2.3 Decision Making on Agro forestry

To determine this aspect, respondents were supposed to indicate in the administered questionnaires their levels of agreement and the results were as follows:

**Table 4.14 Decision Making on Agro forestry**

| Variables                        | R   | SA | A | I     | D | SD   | M    | SD  |
|----------------------------------|-----|----|---|-------|---|------|------|-----|
| Decision Making on Agro forestry | 120 | 59 | 8 | 25.98 | 6 | 1.02 | 4.56 | 0.2 |

Source: Field Data (2016)



R-Respondents ST-Strongly Disagree A-Agree I-Indifferent D-Disagree SD-Strongly Disagree M-Mean SD-Standard Deviation

The results above from the administered questionnaires suggested that the community was involved in agro forestry. The level of agreement was at 67 %, thus mainstreaming gender in implementation have been positive because female and male respondents had prior knowledge of agro forestry. As found out in the past, prior knowledge and knowledge of agro forestry is necessary for implementation of forest conservation programs (Geron, 1991).



**Plate 2:planting of trees by both genders**

**Source: Kenya Forest Service Websites**

**4.4.2.2.4 Decision Making on Forest Harvest**

The results for this aspect were as follows:

**Table 4.15 Decision Making on Forest Harvest**

| <u>Variables</u>                  | <u>R</u> | <u>SA</u> | <u>A</u> | <u>I</u> | <u>D</u> | <u>SD</u> | <u>M</u> | <u>SD</u> |
|-----------------------------------|----------|-----------|----------|----------|----------|-----------|----------|-----------|
| Decision Making on Forest Harvest | 120      | 1.09      | 2.56     | 48.79    | 12.67    | 34.89     | 1.07     | 0.12      |

Source: Researcher 2016

R-Respondents ST-Strongly Disagree A-Agree I-Indifferent D-Disagree SD-Strongly Disagree M-Mean SD-Standard Deviation

The number of those who agreed was at 3.65% while those who disagreed were at 47.46%. The results above showed that the KFO officials completely ignored the contributions of the community when it came to harvesting the forest trees and raising a lot of concerns most of which were corruption issues. In as much as the community had been involved in other activities, neglecting their efforts when it came to harvesting was the reason most of them cut the tree illegally.

**4.4.2.3 Gender and traditional conservation knowledge on implementation of forest conservation in Mau forest complex**

To answer this thematic area, respondents were administered a questionnaire in which they were supposed to indicate their level of agreement or disagreement on whether KFO consulted both genders in conservation programs and their knowledge on conservation.

The results were recorded in the table below:

**Table 4.16: Knowledge of trees**

| Variables                  | R   | SA | A     | D | SD   |
|----------------------------|-----|----|-------|---|------|
| Knowledge on type of trees | 120 | 40 | 48.56 | 5 | 6.44 |

Source: Field Data (2016)

R-Respondents SA-Strongly disagree A-Agree D-Disagree SD-Strongly Disagree

As the results above shows, majority of the respondents strongly agreed (40%) and agreed (48.56) that they had knowledge of trees for instance the kind of trees that are good for water catchment areas. This confirmed the study’s initial presupposition that locals had knowledge of tree types.

**Table 4.16 Knowledge on use of trees**

| <u>Variables</u> | <u>R</u> | <u>SA</u> | <u>A</u> | <u>D</u> | <u>SD</u> |
|------------------|----------|-----------|----------|----------|-----------|
| Knowledge on use | 120      | 35        | 40.81    | 10       | 14.19     |

of Trees

Source: Field Data (2016)

R-Respondents SA-Strongly disagree A-Agree D-Disagree SD-Strongly Disagree

According to the results above, most respondents (both male and female) agreed to know the how various trees were used; those that could be used for herbal cure and making sour milk. This was evident by the 73.81% of the respondents expressing their knowledge of use of trees.

**Table 4.17 Tree Selection**

| <u>Variables</u> | <u>R</u> | <u>SA</u> | <u>A</u> | <u>D</u> | <u>SD</u> |
|------------------|----------|-----------|----------|----------|-----------|
| Knowledge on     | 120      | 50        | 25.14    | 6        | 18.86     |

Tree selection

R-Respondents SA-Strongly disagree A-Agree D-Disagree SD-Strongly Disagree

(Source: Author,2016)

Tree selection contributed a lot to implementation of forest conservation programs. As the results above showed, most respondents knew how to select trees that would be useful in conservation of forest.

It also became apparent that in as much as the members of society were well informed in conservancy issues (male and female), KFO did not consult them implementation process and where it did it only involved men. This position is confirmed by various studies with the same

findings: Medugu (2010), Mbatu (2006), Locke (1999) and Gupte (2004) that indigenous people possessed more knowledge than professionals in matters of implementation of conservation of forest but they were often overlooked. Women were the ones who were often locked out of this process.

#### **4.4.2.3 Gender and participation on forest joint management on implementation of forest conservation in Mau forest complex**

The study sought to find out if the households were allowed to participate in forest joint management in Mau. The respondents were guided by the following variables: Attending meetings, Tree planting, Forest patrols (Fire detection, theft, and deforestation), Forest association management and Buffer Zone management. The findings were tabulated as follows:

**Table 4.18 Attending meetings**

| <u>Variables</u>   | <u>R</u> | <u>SA</u> | <u>A</u> | <u>D</u> | <u>SD</u> |
|--------------------|----------|-----------|----------|----------|-----------|
| Attending Meetings | 120      | 20        | 38.56    | 30       | 32.44     |

Source: Field Data (2016)

R-Respondents SA-Strongly disagree A-Agree D-Disagree SD-Strongly Disagree

The responses were such that 58.56% agreed while 62.44% disagreed to being allowed to attend meetings. These findings confirmed the study's assumption that gender mainstreaming had not been given the due attention it required by the relevant authorities.

**Table 4.19 Tree planting**

| <u>Variables</u> | <u>R</u> | <u>SA</u> | <u>A</u> | <u>D</u> | <u>SD</u> |
|------------------|----------|-----------|----------|----------|-----------|
| Tree Planting    | 120      | 31        | 33.44    | 30       | 10.56     |

Source: Field Data (2016)

R-Respondents SA-Strongly disagree A-Agree D-Disagree SD-Strongly Disagree

The response above showed that 64.44% of the respondents agreed to take part in tree planting while 40.56% disagreed to taking part. These findings did indeed confirm that community involvement in implementation of forest conservation in Mau forest was not adequate and more so gender mainstreaming had not been considered.



**Plate 3: Tree planting day at MAU Eastern**

Source: Kenya Forest Service Website

**Table 4.20: Forest Patrol**

| Variables     | R   | SA | A  | D  | SD |
|---------------|-----|----|----|----|----|
| Forest Patrol | 120 | 45 | 22 | 13 | 20 |

Source: Field Data (2016)

R-Respondents SA-Strongly disagree A-Agree D-Disagree SD-Strongly Disagree

The results above suggested that the community and most importantly women were not involved in forest patrols. Most of the respondents who agreed and strongly agreed to have participated in

forest patrols were male. Thus these findings confirmed this study’s presupposition that women were seen to belong to domestic sphere.

**Table 4.21: assisting in management**

| <u>Variables</u> | <u>R</u> | <u>SA</u> | <u>A</u> | <u>D</u> | <u>SD</u> |
|------------------|----------|-----------|----------|----------|-----------|
| Forest Patrol    | 120      | 43.01     | 30       | 21       | 6.99      |

Source: Field Data (2016)

R-Respondents SA-Strongly disagree A-Agree D-Disagree SD-Strongly Disagree

On this issue, it became apparent that some members of the community were involved in the management of forest affairs but not fully as 27.99% disagreed. Embracing the community in management is part of gender mainstreaming and the fact that the findings suggested a 2/3 integration, then gender mainstreaming had not been given the due attention it deserved.

**Table 4.22: Knowledge of buffer zone**

| <u>Variables</u> | <u>R</u> | <u>SA</u> | <u>A</u> | <u>D</u> | <u>SD</u> |
|------------------|----------|-----------|----------|----------|-----------|
| Forest Patrol    | 120      | 40        | 43.05    | 10       | 6.95      |

Source: Field Data (2016)

R-Respondents SA-Strongly disagree A-Agree D-Disagree SD-Strongly Disagree

Respondents indicated strongly that they knew about buffer zone and by extension knew forest policies. Thus involving them in implementation would have positive influence especially if gender considerations were taken into place.

### 4.4.3 The challenges to gender mainstreaming in forest conservation in Mau Forest Complex

The third objective of this study was to analyze the challenges to gender mainstreaming in forest conservation in Mau Forest Complex. The work of gender being mainstreamed on any aspects has enormous challenges as put forward by Nkembi (2008).

The researcher focused on the challenges of mainstreaming gender in implementation of forest conservation in Eastern Block of Mau Forest. To establish the challenges, the research sought through questionnaires and short structured interviews the feelings and expressions of respondents on four premises as summarized in the table below.

#### 4.4.3 Challenges to gender mainstreaming in forest conservation in Mau Forest Complex

**Table 4.22 Culture as a barrier**

| <u>Variables</u>     | <u>R</u> | <u>SA</u> | <u>A</u> | <u>N</u> | <u>D</u> | <u>SD</u> | <u>M</u> | <u>SD</u> |
|----------------------|----------|-----------|----------|----------|----------|-----------|----------|-----------|
| Culture as a barrier | 120      | 31.14     | 2.08     | 57.9     | 3.98     | 4.9       | 0.34     | 0.129     |

Source: Field Data (2016)

R-Respondents SA- Strongly Agree A-Agree N-Neutral D-Disagree SD-Strongly Disagree

M-Mean SD- Standard Deviation

The respondents who agreed that culture was a barrier to forest conservation were 55.16%. Considering that most of the respondents were male, it became clear that culture indeed was the biggest challenge in mainstreaming gender in conservation of forest. Through the interviews, female respondents pointed out clearly that their society often discriminate against them in public matters yet they were as knowledgeable as men.

**Table 4.23: Activities supporting forest conservation**

| Variables                                 | R   | SA    | A     | N     | D    | SD   | M     | SD    |
|-------------------------------------------|-----|-------|-------|-------|------|------|-------|-------|
| Activities supporting Forest conservation | 120 | 23.06 | 14.06 | 48.79 | 2.45 | 3.67 | 0.456 | 0.356 |

Source: Field Data (2016)

R-Respondents SA- Strongly Agree A-Agree N-Neutral D-Disagree SD-Strongly Disagree

M-Mean SD- Standard Deviation

The response on whether respondent's activities were important in implementing forest conservation was 55.64 %. This was an indication that respondents who understood what implementation of conservation programs was agreed that they were of importance. As argued by Medugu et al. (2010), most indigenous people may not understand their extent of knowledge and how they could be helpful in implementation of forest conservation programs yet in real sense they did.

#### 4.4.3.3 Forest resources supporting livelihoods

**Table 4.24: Forest resources supporting livelihoods**

| Variables                               | R   | SA    | A     | N     | D    | SD   | M     | SD    |
|-----------------------------------------|-----|-------|-------|-------|------|------|-------|-------|
| Forest resources supporting Livelihoods | 120 | 23.06 | 14.06 | 48.79 | 2.45 | 3.67 | 0.456 | 0.356 |

Source: Field Data (2016)

R-Respondents SA- Strongly Agree A-Agree N-Neutral D-Disagree SD-Strongly Disagree

M-Mean SD- Standard Deviation

86.74% of the respondents agreed that the forest was important to them in terms of being a source to various resources. This confirmed that people around the forest valued the forest and



given the necessary support would embrace and carry out implementation of conservation programs well.

**Table 4.25: Inadequacy of education programs on conservation**

| <u>Variables</u>                 | <u>R</u> | <u>SA</u> | <u>A</u> | <u>N</u> | <u>D</u> | <u>SD</u> | <u>M</u> | <u>SD</u> |
|----------------------------------|----------|-----------|----------|----------|----------|-----------|----------|-----------|
| Inadequacy of education Programs | 120      | 23.06     | 14.06    | 48.79    | 2.45     | 3.67      | 0.456    | 0.356     |

Source: Field Data (2016)

R-Respondents SA- Strongly Agree A-Agree N-Neutral D-Disagree SD-Strongly Disagree

M-Mean SD- Standard Deviation. 69.95% of the respondents interviewed agreed that there were inadequate educational campaigns regarding conservation and implementation. As such, these findings are in line with other studies such as in Ellis (2000) and Crewe (1998) which found out that gender mainstreaming in implementation of forest conservation had positive influence yet stakeholders often overlooked it.

#### **4.4.5 Summary**

It is quite clear from the findings that in as much as both genders in the community had experience and knowledge necessary to aid implementation of forest conservation programs in the Eastern Block of Mau Forest Complex, the authorities did not involve them fully. The women were the most disadvantaged because they were not often considered. The findings also confirmed that gender mainstreaming influences the implementation of forest conservancy positively.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of findings, conclusions and recommendations drawn from the study in chapter four. This chapter is organized in three sections. The first section deals with summary of the findings related to the research objectives and conclusions. The second section focuses on recommendations while the third section presents areas for further research.

#### **5.2 Summary of the findings**

##### **5.2.1 Integration of gender specific concerns in the implementation of forest conservation**

Majority of the respondents agreed that indeed both genders were issued with permits to collect firewood meaning that both genders understood the dynamics of forest and by extension had experience to participate in forest conservation activities. Women were in agreement that they were the ones who were responsible for fetching water from the forest and as such understood the importance of the forest in terms of being a source of clean water. Thus, the findings pointed out to the positive influence gender mainstreaming would play in implementation of conservation programs of Mau forest.

Collecting of herbs was not only a both gender affair but it showed that both genders had adequate knowledge of the type of trees and their usage. This is a strong indication that gender mainstreaming in implementation of forest conservation in Mau would bring about positive influence based on the assumption that knowledge of trees is a necessary component in implementation of conservation programs.

Respondents overwhelmingly agreed that they were allowed to use the forest for collecting of foodstuff. It therefore became apparent that both genders considered the forest a source of their livelihoods. This meant that mainstreaming gender in implementation of forest conservation in Mau would yield positive influence because both genders understood the importance of conserving the forest, and would participate in implementation of conservation initiatives.

The study established that there was a gender imbalance in issuance of permit for timber harvesting from the forest. It also emerged in the focus group discussion that there were major corruption issues surrounding issuance of permits to cut timber, whereby forest officials took advantage of their positions to do business.

### **5.2.3 Contribution of gender specific experiences in the implementation of forest conservation in Mau forest complex**

The respondents accepted to have accessed clean water from the forest. This was a strong indication that indeed the respondents and especially women agreed that the forest played a fundamental role in water and fuel supply and as such had the necessary attachment to carry out implementation of forest conservation programs.

Respondents associated the forest with food and fuel access. This indicated that most of the respondents were well aware that the forest acted as a source of food and fuel directly and indirectly. Through researcher's observation, it was established that that female respondents were well placed to understand how the forest could act as a source of food and fuel. This indicated that females were ready to play part in implementation of forest conservation since they were more attached to it in terms of it being a source of food for their families. Therefore, integration of gender mainstreaming and gender specific concerns in implementation would yield better results.

Majority of the respondents agreed that there was abundant supply of farm lands in the forest. This showed that in as much as there were abundant farmlands in the forest area, access to those lands was limited. This meant that either the respondents were aware of the consequences of using forest or they denied access and which they were comfortable with. These findings therefore showed that respondents of either gender were willing to cooperate in protecting and conserving forest land and as such would have brought positive influence in implementation.

The level of agreement on whether the forest environment provided the community with a place to practice their cultural things was above average on both accounts. This indicated that the community which practices circumcision used the forest for their activities and would therefore cooperate accordingly in implementation of forest conservation programs.

The results indicated that half the respondents agreed that they were involved in the process of decision making when it comes to implementation of forest conservation programs except in tree harvesting. The results strongly suggested that the forest officials and management did not fully involve the members of the public. It came out quite clearly in the focus group discussions and interviews that women specifically were not involved in the process.

The study established that that the community was involved in establishing tree nurseries, thus mainstreaming gender in implementation would have positive influence after all because female and male respondents had prior knowledge. the community was also involved in agro forestry, hence, mainstreaming gender in implementation have been positive because female and male respondents had prior knowledge of agro forestry. The results above showed that the KFO officials completely ignored the contributions of the community when it came to harvesting the

forest trees and raising a lot of concerns most of which were corruption issues. In as much as the community had been involved in other activities, neglecting their efforts when it came to harvesting was the reason most of them cut the tree illegally.

Majority of the respondents strongly agreed that they had knowledge of trees for instance the kind of trees that are good for water catchment areas. Tree selection contributed a lot to implementation of forest conservation programs. As the results above showed, most respondents knew how to select trees that would be useful in conservation of forest. It also became apparent that in as much as the members of society were well informed in conservancy issues (male and female), KFO did not consult them implementation process and where it did it only involved men. Also majority of the respondents agreed that women were few in the meetings concerning forest conservation. These findings confirmed the study's assumption that gender mainstreaming had not been given the due attention it required by the relevant authorities.

Most respondents of both genders agreed to take part in tree planting. Most of the respondents who agreed and strongly agreed to have participated in forest patrols were male. Thus these findings confirmed this study's presupposition that women were seen to belong to domestic sphere. Respondents indicated strongly that they knew about buffer zone and by extension knew forest policies. Thus involving them in implementation would have positive influence especially if gender considerations were taken into place.

### **5.2.3 Challenges to gender mainstreaming in forest conservation in Mau Forest Complex**

The study established that culture was a barrier to forest conservation. Considering that most of the respondents were male, it became clear that culture indeed was the biggest challenge in mainstreaming gender in conservation of forest. Through the interviews, female respondents pointed out clearly that their society often discriminate against them in public matters yet they

were as knowledgeable as men. Most of the respondents interviewed agreed that there were inadequate educational campaigns regarding conservation and implementation.

## **5.2 Conclusions**

Majority of the respondents agreed that indeed both genders were issued with permits to collect. Women agreed that they were the ones who were responsible for fetching water from the forest. Collecting of herbs was not only a both gender affair but it showed that both genders had adequate knowledge of the type of trees and their usage. Respondents overwhelmingly agreed that they were allowed to use the forest for collecting of foodstuff. The study established that there was a gender imbalance in issuance of permit for timber harvesting from the forest and that there were major corruption issues surrounding issuance of permits to cut timber, whereby forest officials took advantage of their positions to do business.

The respondents accepted to have accessed clean water from the forest. Respondents associated the forest with food and fuel access. Through researcher's observation, it was established that that female respondents were well placed to understand how the forest could act as a source of food and fuel. The level of agreement on whether the forest environment provided the community with a place to practice their cultural things was above average on both accounts. This indicated that the community which practices circumcision used the forest for their activities and would therefore cooperate accordingly in implementation of forest conservation programs. The study established that that the community was involved in establishing tree nurseries, thus mainstreaming gender in implementation would have positive influence after all because female and male respondents had prior knowledge. The community was also involved in agro forestry, hence, mainstreaming gender in implementation have been positive because female and male respondents had prior knowledge of agro forestry. The results above showed

that the KFO officials completely ignored the contributions of the community when it came to harvesting the forest trees and raising many concerns most of which were corruption issues. In as much as the community had been involved in other activities, neglecting their efforts when it came to harvesting was the reason most of them cut the tree illegally.

The study established that culture was a barrier to forest conservation. Considering that most of the respondents were male, it became clear that culture indeed was the biggest challenge in mainstreaming gender in conservation of forest. Through the interviews, female respondents pointed out clearly that their society often discriminate against them in public matters yet they were as knowledgeable as men were.

### **5.3 Recommendations**

- i. The level of integration of gender mainstreaming in implementation of Mau Forest Conservation is low yet both genders have the necessary information to contribute in the conservation processes. Thus, stakeholders must involve parties from both genders in any conservation activity now and even in the future.
- ii. Both women and men contribute equally in terms of experiences concerning implementation of conservation programs at Mau Forest Complex and as such all of them should be involved equally in conservation.
- iii. The main challenge towards full integration of both genders in conservation is culture and as such, stakeholders should carry out sensitization and empowerment programs in order to bring on board all members of society.

#### **5.4 Suggestion for Further Research**

Since this research study was not exhaustive, it suggests that further research be done of the reasons why there is still low integration of gender mainstreaming in conservation programs and on better ways to integrate gender mainstreaming



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## APPENDIX I: QUESTIONNAIRE FOR MAU HOUSEHOLDS

### Introduction

This questionnaire aims to collect information regarding Influence of Gender Mainstreaming on Implementation of Forest Conservation in Mau Forest Complex, Kenya. You are, therefore, requested to keenly read and complete this questionnaire keenly. The information you provide will be treated with a lot of confidentiality. Do **NOT** write your name anywhere on this paper.

### Section A: Personal Information

Please, respond by putting a tick (✓) if yes.

1. Your gender: Male [ ] Female [ ]
2. How long have you stayed in this area?

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3. State your occupation?

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4. What motivated you to settle in this area?

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## 6. CONCERNS OF RESIDENTS

| <b>S/No</b> | <b>The Kenya forest service and chiefs permits us to</b> | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>S</b> |
|-------------|----------------------------------------------------------|-----------|----------|----------|----------|----------|
|             |                                                          | <b>1</b>  | <b>2</b> | <b>3</b> | <b>3</b> | <b>4</b> |
| 1           | Collect firewood                                         |           |          |          |          |          |
| 2           | Fetch quality water                                      |           |          |          |          |          |
| 3           | Collect herbs                                            |           |          |          |          |          |
| 4           | Collect foodstuffs                                       |           |          |          |          |          |
| 5           | Cut Timber                                               |           |          |          |          |          |
| 6           | Cultivate land                                           |           |          |          |          |          |
| 7           | Use forest land for cultural activities                  |           |          |          |          |          |

## 7. Gender experiences

Access and Supply of forest resources

| <b>S/No</b> | <b>We have had the following experiences over access and supply of forest resources</b> | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
|-------------|-----------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
|             |                                                                                         | <b>1</b>  | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b>  |
| 1           | We easily access water and fuel                                                         |           |          |          |          |           |
| 2           | There is abundant supply of water and fuel in forest                                    |           |          |          |          |           |
| 3           | We easily access herbal cure                                                            |           |          |          |          |           |
| 4           | There is abundant supply of herbal cure                                                 |           |          |          |          |           |
| 5           | We easily access food supply                                                            |           |          |          |          |           |
| 6           | There is adequate supply of food                                                        |           |          |          |          |           |
| 7           | We easily access farmland                                                               |           |          |          |          |           |

|    |                                             |  |  |  |  |  |
|----|---------------------------------------------|--|--|--|--|--|
| 8  | There is adequate supply of farmland        |  |  |  |  |  |
| 9  | We easily access cultural issues            |  |  |  |  |  |
| 10 | There is abundant supply of cultural issues |  |  |  |  |  |

| <b>S/No</b> | <b>The Kenya Forest Service and Chiefs allows us to participate in decision making over:</b> | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
|-------------|----------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
|             |                                                                                              | <b>1</b>  | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b>  |
| 1           | Afforestation                                                                                |           |          |          |          |           |
| 2           | Establishment of nurseries                                                                   |           |          |          |          |           |
| 3           | Agro forestry                                                                                |           |          |          |          |           |
| 4           | Forest harvest                                                                               |           |          |          |          |           |

| <b>S/No</b> | <b>The Kenya Forest Service and Chiefs consult us on tradition conservation knowledge about:</b> | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
|-------------|--------------------------------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
|             |                                                                                                  | <b>1</b>  | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b>  |
| 1           | Types of trees and plants                                                                        |           |          |          |          |           |
| 2           | Use of trees and plants                                                                          |           |          |          |          |           |
| 3           | Tree selection                                                                                   |           |          |          |          |           |

| S/No | The Kenya Forest Service and Chiefs allows us to participate in forest management by: | SA | A | U | D | SD |
|------|---------------------------------------------------------------------------------------|----|---|---|---|----|
|      |                                                                                       | 1  | 2 | 3 | 4 | 5  |
| 1    | Attending meetings                                                                    |    |   |   |   |    |
| 2    | Tree planting                                                                         |    |   |   |   |    |
| 3    | Forest patrols(Fire detection, theft, deforestation)                                  |    |   |   |   |    |
| 4    | Tree planting                                                                         |    |   |   |   |    |
| 5    | Buffer Zone management                                                                |    |   |   |   |    |

### Challenges of Gender mainstreaming in forest conservation

| S/No | Challenges                                                     | SA | A | U | D | SD |
|------|----------------------------------------------------------------|----|---|---|---|----|
|      |                                                                | 1  | 2 | 3 | 4 | 5  |
| 1    | Culture is a barrier to forest conservation                    |    |   |   |   |    |
| 2    | Our activities do not promote forest conservation              |    |   |   |   |    |
| 3    | Forest Resources do not support our livelihoods                |    |   |   |   |    |
| 4    | There is inadequate education campaigns on forest conservation |    |   |   |   |    |

9. Who collects firewood from forest?

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10. Who uses forest land for cultural activities?

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11. Who is responsible for the collection of food stuffs?

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12. Who is engaged in farmland activities?

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13. How is the participation of both genders in decision making over forest resources

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14. How many times are you allowed to participate in forest management?

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15. Who is consulted in traditional conservation knowledge?

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16. How is culture a barrier to Forest conservation?

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17. To what extent do our activities promote forest conservation?

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18. Is there any education and campaign on forest conservation?

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**APPENDIX II: INTERVIEW SCHEDULE FOR THE KENYA FOREST SERVICE  
OFFICERS AND CHIEFS**

**Introduction**

This interview schedule is meant to elicit information, which will unearth ways in which the Ministry of Environment has dealt with the issue of gender mainstreaming in forest conservation in the area. You are therefore requested to carefully respond to these question items. The information you provide is confidential and will not under any circumstance be divulged to any other person. Do **NOT** write your name anywhere on this paper.

**Personal information**

Please respond by putting a tick [  ] if yes

1. Your gender: Male [  ] Female [  ]
2. When were you posted here? \_\_\_\_\_

**TUS QUO:GENDER AND ACCESS TO FOREST**

Which gender mostly accesses the Mau forest for supply of the following services?

| S/NO | GENDER CONCERNS                     | M | F |
|------|-------------------------------------|---|---|
| 1    | Water quality and quantity and fuel |   |   |
| 2    | Herbal cure                         |   |   |
| 3    | Food Supply                         |   |   |
| 4    | Timber                              |   |   |
| 5    | Farmland                            |   |   |
| 6    | Cultural Issues                     |   |   |
| 7    | Forest patrols                      |   |   |

#### 4. GENDER AND ACCESS TO FOREST

We issue permits to residents to:

| S/NO | Gender concerns.                        | SA | A | U | D | SD |
|------|-----------------------------------------|----|---|---|---|----|
|      |                                         | 1  | 2 | 3 | 4 | 5  |
| 1    | collect firewood                        |    |   |   |   |    |
| 2    | Fetch water                             |    |   |   |   |    |
| 3    | Collect herbs                           |    |   |   |   |    |
| 4    | Collect foodstuffs                      |    |   |   |   |    |
| 5    | Cut Timber                              |    |   |   |   |    |
| 6    | Cultivate land                          |    |   |   |   |    |
| 7    | Use forest land for cultural activities |    |   |   |   |    |

#### 4 Access and supply of forest resources

| S/No | We involve residents in decision making over: | SA | A | U | D | SD |
|------|-----------------------------------------------|----|---|---|---|----|
|      |                                               | 1  | 2 | 3 | 4 | 4  |
| 1    | Afforestation                                 |    |   |   |   |    |
| 2    | Establishment of nurseries                    |    |   |   |   |    |
| 3    | Agro forestry                                 |    |   |   |   |    |



| S/No | <b>We consult residents on traditional conservation knowledge:</b> | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
|------|--------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
|      |                                                                    | <b>1</b>  | <b>2</b> | <b>3</b> | <b>4</b> | <b>4</b>  |
| 1    | Types of trees and plants                                          |           |          |          |          |           |
| 2    | Use of trees and plants                                            |           |          |          |          |           |
| 3    | Tree selection                                                     |           |          |          |          |           |

| S/No | <b>We allow residents to participate in forest management by</b> | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
|------|------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
|      |                                                                  | <b>1</b>  | <b>2</b> | <b>3</b> | <b>4</b> | <b>4</b>  |
| 1    | Attending meetings                                               |           |          |          |          |           |
| 2    | Tree planting                                                    |           |          |          |          |           |
| 3    | Forest patrol                                                    |           |          |          |          |           |
| 4    | Tree harvesting                                                  |           |          |          |          |           |
| 5    | Buffer zone management                                           |           |          |          |          |           |

### **5. Challenges of gender mainstreaming in forest conservation**

| <b>Challenges</b>                                                  | <b>SA</b> | <b>A</b> | <b>U</b> | <b>D</b> | <b>SD</b> |
|--------------------------------------------------------------------|-----------|----------|----------|----------|-----------|
|                                                                    | <b>1</b>  | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b>  |
| Culture is a barrier to forest conservation                        |           |          |          |          |           |
| There is inadequate education and campaigns on forest conservation |           |          |          |          |           |
| Forest resources do not support livelihood                         |           |          |          |          |           |

6. Is there any meeting held between you and the community?

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7. Who is involved in forest patrol?

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8. How many times do you give permit to residents to access forest resources?

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9. Who is allowed in participation of decision making over Afforestation, Agro forestry.

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10. Who is consulted on traditional conservation knowledge on types of trees and plants, tree selection and use of trees and plants?

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11. Who participates in Buffer zone management?

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12. Who is involved in farmland activities?

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13. How many times do you educate residents on forest conservation?

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**APPENDIX III: INTRODUCTORY LETTER**



**KISII UNIVERSITY**

(ISO 9001:2008 Certified Institution)

**ELDORET CAMPUS**

**OFFICE OF THE DEPUTY DIRECTOR-ACADEMIC AFFAIRS**

Phone: 020-2610479

P. O. Box 408- 40200

Email:eldoretcampus@kisiiversity.ac.ke

ELDORET-KENYA

12<sup>th</sup> August, 2016

TO WHOM IT MAY CONCERN

Dear Sir / Madam.

**RE: RESEARCH DATA COLLECTION PERMIT.**

**CHEROTICH Z. KOSKEY MAS/60081/14**

The above named is a bonafide student of Kisii university- Eldoret Campus pursuing a **Masters of Arts in Geography** in the faculty of Arts and Social Sciences.

She is working on her research entitled "*Influence Of Gender Mainstreaming On Implementation Of Forest Conservation In The Eastern Block Of Mau Forest Complex Kenya.*" in partial fulfilment for the requirement of the Award of Masters in **M.A-Geography.**

We are kindly requesting your office to provide her with the permit to proceed to the field for data collection and completion of her research.

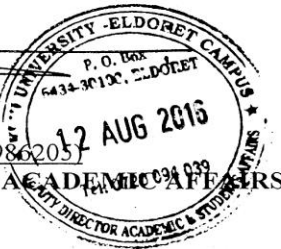
Please do not hesitate to call the undersigned for any verification.

Any assistance extended to her will be highly appreciated.

Yours faithfully,

Charles O. Ongiyo (0720986205)

DEPUTY DIRECTOR – ACADEMIC AFFAIRS



## APPENDIX IV: RESEARCH AUTHORIZATION

### NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,  
2241349, 3310571, 2219420  
Fax: +254-20-318245, 318249  
Email: dg@nacosti.go.ke  
Website: www.nacosti.go.ke  
when replying please quote

9<sup>th</sup> Floor, Utalii House  
Uhuru Highway  
P.O. Box 30623-00100  
NAIROBI-KENYA

Ref. No.

Date:

**NACOSTI/P/16/56874/13290**

**29<sup>th</sup> August, 2016**

Cherotich Zipporah Kosgey  
Kisii University  
P.O. Box 402-40800  
**KISII.**

#### **RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *“Influence of gender mainstreaming on implementation of forest conservation in the Eastern Block of Mau Forest Complex, Kenya,”* I am pleased to inform you that you have been authorized to undertake research in **Kericho County** for the period ending **26<sup>th</sup> August, 2017.**

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

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

  
BONIFACE WANYAMA  
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner  
Kericho County.

The County Director of Education  
Kericho County.

**APPENDIX V: RESEARCH PERMIT**

**THIS IS TO CERTIFY THAT:  
MS. CHEROTICH ZIPPORAH KOSGEY  
of KISII UNIVERSITY, 6434-30100  
ELDORET, has been permitted to conduct  
research in Kericho County**

**Permit No : NACOSTI/P/16/56874/13290  
Date Of Issue : 29th August, 2016  
Fee Received : ksh 1000**

**on the topic: INFLUENCE OF GENDER  
MAINSTREAMING ON IMPLEMENTATION  
OF FOREST CONSERVATION IN THE  
EASTERN BLOCK OF MAU FOREST  
COMPLEX, KENYA**



**for the period ending:  
26th August, 2017**

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

*[Handwritten Signature]*  
**Director General  
National Commission for Science,  
Technology & Innovation**

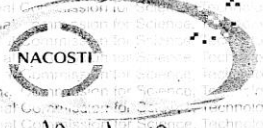
**ORIGINAL** for Science, Technology and Innovation National Commission for Science, Technology and Innovation

**OFFICIAL RECEIPT**

**AC: 11813**

**Station:** Naurobi **Date:** 19/8/16  
**RECEIVED from:** CHEROTICH ZIPPORAH KOSGEY  
**Shillings:** One thousand Kenya Shillings  
**only**  
**on account of:** Research permit fee

**Vote Head:** *[Handwritten]*



|      |        |
|------|--------|
| USD  | .....  |
| Kshs | 1000/- |
| AC   | .....  |
| No.  | .....  |

**Cash** .....  
**Cheque No.:** Direct deposit *[Handwritten]*

*[Handwritten Signature]*  
**Signature of Officer receiving remittance**

APPENDIX VI: MAP OF MAU FOREST COMPLEX

Kenya's Mau forest complex

