

**CHALLENGES AND POLICY OPTIONS FOR ENHANCING
WOMEN'S PARTICIPATION IN WATER RESOURCES
MANAGEMENT IN KAJIADO COUNTY, KENYA**

BY

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DECLARATION

This Thesis is my original work and has not been submitted for a degree in any University.

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DEDICATION

This work is affectionately dedicated to my late Dad, Gathagu, Mother, Muthoni and dear sons, Harry, Thomas and Michael. They have brought such joy and fulfillment in my life.

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I wish to extend my sincere thanks to my supervisors, Dr. Jones Agwata and Dr. Richard Mulwa for their invaluable comments, constructive criticisms and guidance which enabled me to undertake and complete this work. I am also profoundly indebted the University of Nairobi for the opportunity to undertake my masters course at the University.

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Above all, I would like to thank God for his unfailing love, unlimited provisions and sustainability. Through Him, I have been able to achieve my life time dream and purpose.

OPERATIONAL DEFINITION OF TERMS

Access to drinking water and sanitation- Access to safe drinking water means an average of 20 liters of water per person per day within one kilometer walking distance from the household while basic sanitation simply refers to a sanitary means of excreta disposal.

Gender- This is the socially construed as opposed to biologically determined roles of women and men including the relationships between them in a particular society at a specific place and time.

Gender Analysis- This is the understanding of the relationship between men and women, gender household relations, empowerment, access and control, and participation in decision making at all levels.

Gender Mainstreaming- This 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 the policies and programs in all political, economic and societal spheres so that men and women benefit equally and inequality is not perpetuated.

Environmental decision making- This is the process of choosing and identifying alternatives concerning the environment based on the preferences and values of the decision maker.

Integrated water resources management- This is a holistic approach to water management, in response to the growing competing demands for finite water supplies. It is also an approach that aims to ensure the coordinated development of water, land and related resources to optimize economic and social welfare without compromising the environmental system. It also encompasses a contributory arrangement and implementation process which is founded on sound science and which brings stakeholders collectively to determine how to meet the long term community needs for water resources.

ACRONYMS

ASALS	Arid and Semi-Arid Lands
EAC	East African Community
FAO	Food and Agricultural Organization
GAD	Gender and Development
GOK	Government of Kenya
GWA	Gender and Water Alliance
GWP	Global Water Partnership
ICF	International Conference on Freshwater
ICWE	International Conference on Water and the Environment
IDWSD	International Drinking Water and Sanitation Decade
IEW	Institute of Environment and Water
IFAD	International Fund for Agricultural Development
IWPM	Integrated Water Resources Management
MDG	Millennium Development Goals
NSSP	Water Sector Strategic Plan
TEC	Technology Evaluation centre
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment Development
UNDP	United Nations Development Programme
WED	Women Environment and Development
WHO	World Health Organization
WRI	World Resources Institute
WSSD	World Summit on Sustainable Development

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ABSTRACT

The importance of involving women in the management of water resources has been recognized at the global level. In most societies, women have the primary responsibility for management of household water supply, sanitation and health. In these societies, women play the role of family care givers in providing food, proper nutrition, clean water and proper sanitation. Due to the said social roles, women depend directly on water resources. Women have therefore accumulated considerable knowledge about water resources, including location, quality and storage methods.

The Kenya Government together with other development agencies has made commitments to ensure enhanced participation and involvement of women in the management of water resources. Towards this end, policies and legislation have been put in place to enhance the participation of women in water resources management. However, the implementation and effectiveness of these policies and legislation has not been clearly established especially in the traditional rural contexts of the developing countries. In Kenya several challenges hinder women from effectively participating in water resources management. These challenges have not been adequately examined in Kajiado County.

This study examined the challenges women face in the management of water resources in Kajiado County. The study was guided by the main objective which was to assess the role of women in water resources management in Kajiado County. The study design used was descriptive in nature and the study was done in three out of the seven Divisions of the County. The three Divisions were randomly picked. Data was collection by the use of the questionnaires, focused group discussions and the use of the key informants in the study area.

The existing policy, legal and institutional framework was also examined. A total of 196 respondents in nine locations which were randomly selected from three divisions, that is, Central Kajiado, Namanga and Mashuru. Primary data was collected using questionnaires, interviews and direct observations while secondary data was collected

through document analysis. Random and purposive sampling methods were used to come up with the required sample. The study was descriptive in nature and qualitative data was obtained to identify the challenges which hindered women from participating in water resources management. Information on the role of women in use and management of water resources, sources of and access to water was also obtained.

The data collected was analyzed and presented in form of figures and tables. Qualitative data was also analyzed according to emerging issues and presented in narratives as well as direct quotes. The findings were presented in excel tables of percentages, pie charts and figures.

The study established that women in Kajiado spend a lot of time and energy per day collecting water for domestic use. As a result, they have no time for self-development such as education and income generation. The findings also revealed that the Maasai culture has created gender inequality where women play a subordinate role in the society and rarely included in decision making structures. However, it emerged that the constitutional provisions for inclusion of at least one third of each gender in elective and appointive positions has helped to put a few women in the management of water resources. Unfortunately these women, according to the study, do not effectively participate due to the identified challenges.

The Maasai exhibit gender inequality in the form of patriarchy. The pattern has influenced customary marriages, inheritance of property and control over resources. Maasai women experience subordinate social status and they are responsible for most of the household chores with no decision making power within the household and the community. The boreholes there is single water point, where water is drawn from a single trough. Since men own the livestock, they control the water point and ensure that the cattle are given priority to drink water and also the gender discrimination in education is still high.

Based on the findings, it is recommended that formal education and capacity building for women in water resources management be addressed. A gender policy in water resources management, and amendment of the Water Act to specifically include the role

of women, are also recommended. Further research should be carried out to obtain actual data on the number of women involved in water resources management in the entire County.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Water is one of the most important resources for man's survival and it is essential to human beings and all forms of life. It is necessary for sustainable development, poverty eradication, reproductive and maternal health, and in combating diseases. Unfortunately, one third of the world's population experiences some kind of physical or economic water scarcity. Due to increasing demand for water from different sectors such as industry, agriculture, power generation, domestic use and the environment, it is increasingly difficult for poor people to access the resource for productive, consumptive and social use.

In areas facing water scarcity, access to water resources is a serious challenge due to competition for the resource. Where there is competition, it is the poor and the vulnerable who suffer. In most societies, women are usually considered poor and vulnerable. According to UNDP (2006), water availability is linked to poverty, food security, health, gender equality and gender equity. Inadequate and unequal access to water is both a result and cause of poverty and can be termed as a denial of human rights, good health, adequate nutrition, literacy and employment.

Access to adequate amounts of clean water is essential for maintaining good health, and access to water for agriculture is essential for food production. When it is scarce, competition for it will lead to the vulnerable groups being deprived. Women, children, the sick and the elderly people will suffer the most. Although the links between water and poverty may be easy to grasp, the issue of how to organize our societies and our water resources so that the poor are able to access water for consumption and production has not been given necessary attention. According to IFAD (2007), water is essential for food production and food security and an estimated 70 per cent of available freshwater resources are used for irrigation.

In most sub-Saharan Africa and Latin America there is considerable untapped potential for bringing more land under irrigation. Irrigation does contribute to poverty reduction, and its development can be made more pro-poor by securing better access to water for poor farmers especially women (FAO, 2003). When there is lack of water, it is the women who spend so many hours looking for it. Children are also affected because instead of going to school, they are forced to accompany the women in search for water.

Water is a basic necessity of life and when it is scarce, it is the women who must spend so many hours looking for it. These hours could otherwise be used in more productive work like education and agricultural production to improve the general well being of the families. Lack of access to water causes gender inequality, poverty and lack of education to women According to WHO (1997) , access to safe drinking water averages of 20 liters per person per day within one kilometer walking distance from the household, while basic sanitation refers simply to a sanitary means of excreta disposal. Access to safe drinking water is also very critical to the attainment of the Millennium Development Goals (MDGs) in that it is essential in eradication of extreme poverty and hunger, improving maternal health, achieving universal primary education, promoting gender equality and empowerment of women, reducing child mortality. Nevertheless, despite this undisputed importance of water, securing access to safe drinking water has only fairly recently become one of the key goals of development.

Due to the importance of water as a resource, it is imperative that it be managed sustainably. This calls for integrated water resources management (IWRM) which coordinates the development and management of water related resources while seeking to maximize social and economic welfare in an equitable manner, to sustain ecosystems and to bring together the technical, ecological, social and political spheres. An essential part of an integrated approach is the participation of stakeholders, including local communities and women.

In most societies, women have the primary responsibility for management of household water supply, sanitation and health. In these societies, women play the role of family care givers in providing food, proper nutrition, clean water and proper sanitation. Due to the

said social roles, women on their daily activities depend directly on water resources. As a result, women have accumulated considerable knowledge about water resources, including location, quality and storage methods. In this regard, it would be correct to say that women are the invisible managers of this resource.

Over the years, the important role that women have played in water resources management has been broadly recognized at global, continental, regional and local levels through treaties, conventions, policies and legislation. For instance, the Kenya Water Sector Strategic Plan (WSSP) 2010-2012 acknowledges that the Government of Kenya has made attempts through legislation, policies and institutions to extend access to safe drinking water to the people and also to enhance women's participation in water resource management (WSSP, 2010)

The National Water Master Plan, launched in 1974, had the express aim of ensuring that potable water was made available, at a reasonable distance, to all households by the year 2000. Following this plan, the Ministry of Water Resources then formulated Sessional Paper No. 1 of 1999, which is the National Policy on Water Resources Management and Development. This policy paper recognized the importance of enhancing participation in water programmes by the local communities and also the importance of incorporating all stakeholders including women in sustainable water resources management. Pursuant to this Sessional Paper, the then Water Act, Chapter 372, Laws of Kenya, was repealed and subsequently the Water Act of 2002 enacted which stipulated the involvement of water resources management by both gender. The Act provides the legal and institutional framework governing the management of water resources in Kenya. It provides for a decentralized structure which involves participation of all stakeholders (both the female and the males) in water resources management at various Levels (WSSP, 2010)

Access to clean water is a primary challenge in the Arid and Semi Arid Lands (ASALs) of Kenya. Kajiado County the study area is situated within the ASALs. Protection of water sources and management of water points is a primary responsibility of women as they are usually expected to provide water for domestic consumption as well as for livestock. However due to various factors established by this study, men dominate water

committees and the user groups. Long distances to water points (average 10 km one way) and poor workmanship in the water points also expose women to constraints and hardship (GOK, 2012).

The National vision and strategy for natural resources management in the ASALs acknowledges that due to their cultural and social roles, women are placed in a situation where they are likely to bear most of the burden associated with environmental degradation such as climate change, desertification, land degradation and deforestation . Any effort towards improving access to water and ensuring sustainable management of the resource should have full participation of all stakeholders including women.

Despite the recognition of the important role played by women and the efforts that the Government has made in enhancing women's participation in water resource management, there is an existing gap between written intentions of enhancing women's participation in water resource management and the practice in Kenya and specifically in Kajiado County. It is against this background that this study was conducted to investigate how women are participating and the factors hindering their effective participation in water resources management. This study also endeavored to examine the existing legal, institutional and policy framework. The data collected will help to assess the impact of the existing policies and legislation and assess whether they have enhanced women's participation in water resources management.

1.2 Statement of the Problem

Kenya is a water scarce country and the problem is more severe in the ASALs where Kajiado County is situated. Whenever water is scarce, it is the vulnerable people such as the poor, the sick, elderly, children and women who are most adversely affected. Due to their role in the society, women are the most affected by environmental issues such as water scarcity and water pollution. Consequently, they are most concerned about these issues. As such they are most committed to ensuring that water resources are sustainably managed. When people influence or control decisions that affects them, they have a greater stake in the outcomes and are committed to ensuring their success. Participation

helps to break down the cycle of dependence which characterizes much top down development work.

The government of Kenya has made great efforts to recognize the role of women in water resources management. Various international treaties and conventions have been adopted and incorporated into our national laws and policies with the intention of enhancing women's participation in water resources management. However, limited research has been done in various Counties to ascertain the actual level of participation and contribution of women in the management of water resources. The actual participation and the challenges hindering women's effective participation in Kajiado County have also not been comprehensively examined.

1.3 Research Questions

This study was guided by the following questions.

- a) What is the role of women in water resources management in Kajiado County?
- b) Which socioeconomic challenges do women face in participating in water resources management in the Kajiado County?
- c) Does the existing legal, institutional and policy framework enhance women's participation in water resources management in the Kajiado County?

1.4 Objectives of the Study

The objectives of the study were to:

- a) Assess the role of women in water resources management in Kajiado County.
- b) Examine the socioeconomic challenges hindering women from participating effectively in the management of water resources in Kajiado County.
- c) Assess the efficacy of existing legal, institutional and policy framework in enhancing the participation of women in water resources management in the County.

1.5 Justification and Significance of Study

Participation of women in water resources management is very important as this leads to sustainability of the resource. Despite efforts having been made by the Kenya

government to enhance the participation of women, there is still a widely felt gap between “paper” recognition of gender issues in water management policies and projects and the lack of real efforts on the ground to effectively address the challenges which are affecting women’s participation in the water sector.

There is an existing gap between intentions of enhancing women’s participation in water resource management and the practice on the ground. This study endeavors to investigate the extent to which the gaps exist, where and why they exist. The ultimate aim of the study was to close these gaps and enhance women’s participation in water resources management. Participation of women in water resources management will ensure and produce more efficient and more sustainable water plans, projects and programs.

The study is important in informing the development of policies and other mechanisms which would enhance the participation of women in the management of water resources. The findings of this study were intended to influence policy and decision makers to take into account the challenges which have been established and address them through policy reforms .The goal was to enhance women’s participation in water resources management in order to attain sustainability of water management plans, programmes and projects. In the end, this would improve access to safe drinking water, alleviate poverty and improve the general wellbeing of the general population in the County.

1.6 Scope and Limitations of the Study

Kajiado County has seven administrative divisions and the area covered is very expansive. Time and financial constraints significantly limited the study in the sense that it was not possible to cover all the administrative divisions in the County and only three were selected. Due to the distance separating various divisions in the County, the study was carried out in Mashuru, Namanga and Kajiado Central divisions which were taken to be representative of the entire County. Poor road network was also a major challenge especially in Mashuru division where a motorcycle had to be used as vehicles could not access some areas in the division.

Although there has been an increased migration of other communities to Kajiado County, the study only dealt with the native community which is the Maasai. Language barrier was also a challenge and services of an interpreter had to be engaged. Ethical issues also came into play; the study population was informed that we needed their informed consent, which was sought, before proceeding with the interviews and that all information provided was treated with confidentiality. Another limitation experienced was to ignorance which meant that some scheduled focus group discussions failed to take place as the people demanded rewards in exchange of information .

The study was conducted during the months of February and March which is the dry season. Most of the men had migrated to other places with the cattle in search for pasture. The women who remained behind were busy searching for water for domestic use. Thus, they were not available at home and also they did not have time for the interviews. To address this challenge, the interviews were held during the evening when women had come from fetching water. Women were also very reluctant to offer information because they are culturally not allowed by their men to speak to strangers. As a result, several meetings were postponed which meant spending more money and time well over and above the planned budget.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, studies relevant to the study are reviewed in various sections. The first section evaluates the relationship between women and the environment. The second section reviews literature on women and water resources management showing the important role women play in the management of water resources. Various case studies on women's participation in water resources from different countries have been reviewed with a view to establishing the gaps that this study sought to fill. The existing policy, legal and institutional mechanisms have been reviewed against case studies to establish if they have been effective. Finally, the chapter provides the analytical framework giving the theoretical and conceptual framework of the study.

2.1 Women and the Environment

Women, over time, have been known to interact very closely with the environment. However, the focus has been on men while women's involvement with the environment has been ignored. The import of this is that the role that women in environmental struggles and debates has not been well documented. The position and concerns of women have also been invisible in environment debates and programmes. In reviewing recent centuries' environmental crisis, it is noted that very many women in every social class have openly raised their concerns about the environment (Angula, 2007).

It has recently become clear that the relationship between people and the environment is not gender-neutral. Clay (2005) argues that women's domestic roles make their daily activities nature focused, hence bringing them very close to the environment. As ecological conditions worsen, the long march to accessing environmental resources and services becomes even longer and more tiresome. In view of this, women can make a difference in the environmental management and be a powerful force for positive change in the environment and the world around them.

Various experiences from different parts of the world indicate that women are deeply involved in the management of various environmental resources such as forests, energy, agriculture, and water at the local level. According to Van (1998) women bear the highest costs of the environmental crisis because of their roles in providing water, food and energy at family and community levels. In this regard, women could potentially also make a large contribution to the crisis, precisely due to their role in the management of critical environmental resources. Since the increase in women's power and the sustainable development are economically tied, it is imperative that they be enabled to participate in development planning and management of natural resources at various levels of their operations.

In most societies, especially in developing countries, women are considered the primary users of natural resources such as water land and forests because they are the ones who are responsible for gathering these resources. Although they don't own the land, they spend most of their time working on the farms to feed their households. Shouldering this responsibility leads them to learn more about these natural resources and this promotes knowledge and culture of sustainable use of natural resources and the environment (Algula, 2007). This way, they tend to be the ones who are mostly impacted by environmental issues such as climate change, land degradation, pollution and deforestation. According to Jigging (1994), women tend to see natural resources as supporting their basic needs while men on the other hand; tend to view natural resources as commercial entities or income generating tools.

Women in developing countries have made remarkable contribution in environmental management as some of the oldest environmental and ecological movements were initiated by women. The Chipko movement in India , for instance, was started as an act of defiance against the state government's permission given to a corporation for commercial logging (Grewal and Jyoti, 2004) .Women in the villages resisted the move by embracing trees to prevent their felling in order to safeguard their lifestyles which were dependent on forests.

Breton (1998) reinforces the argument that women would protect the environment better than men if they are given the opportunity. Referring to the Chipko movement, she says that the conflict which caused women to hug the trees started because the men wanted to cut the trees to use them for industrial purposes while women wanted to keep them as their food resource. Deforestation, according to the women could therefore threaten the survival of the local people.

In Kenya, the Green Belt Movement which is one of the biggest movements in women's environmental history was founded by the late Professor Wangari Maathai in June, 1977. The movement focused on restoration of Kenya's rapidly diminishing forests as well as empowering the rural women through environmental preservation with special emphasis on planting indigenous trees. By 2005, nearly thirty (30) million trees had been planted by participants of the Green Belt Movement on public and private lands (GreenBelt, 2006).

2.2 The Role of Women in Water Resources Management

Having shown that women have a very close relationship with nature and the environment, this subsection looks at the role women play in water resources management. In most societies, women have the primary responsibility for management of household water supply, sanitation and health. Water is necessary not only for drinking but also for food production and preparation, care of domestic animals, personal hygiene, care of the sick, cleaning and waste disposal. Because of their dependence on water resources, women have accumulated considerable knowledge on various aspects of water resources, such as location, quality and storage methods (GWA, 2009).

In many societies, food and water gathering was originally a female responsibility. According to Boserup (1989), it was "woman- the- gatherer" who was the source of sustainable food supply and not "man – the- hunter". When access to water is poor, women spend a lot of time searching for it in order to sustain their families. It follows therefore, that improving access to environmental resources such as water will significantly improve the lives of women and their entire families. This will in turn make

them have more time for food production, income generation, taking care of the children and the elderly. They will also have more time for other household chores, self improvement and leisure activities which will definitely have a positive impact on the general welfare at the household level (Davidson, 1988).

Coates (1999) observes that women have accumulated considerable knowledge about water resources, including location, quality and storage methods. Recent studies have suggested that men and women have different interests in the management and use of water resources. The two genders obtain different benefits from the resources. When there is poor sanitation, water and food scarcity, girls and women become the major victims. As such they are most committed to ensuring that water resources are sustainably managed. This attests to the fact that when people influence or control decisions that affects them, they have a greater stake in the outcomes and are committed to ensuring success. Participation of women therefore would produce more efficient and more sustainable water plans, projects and programs.

In Morocco, the rural water supply and sanitation project reduced the “burden of girls who were traditionally involved in fetching water” in order to improve their school attendance. In the provinces where the project was based, it was found that girls’ school attendance increased by 20 per cent in four years, attributing in part to the fact that girls spent less time fetching water. At the same time, easy access to safe water reduced time spent collecting water by women and young girls by 50 to 90 per cent (World Bank, 2003).

Access to basic resources such as water, is critical to any meaningful rural development. Women participation in the management of this resource is crucial to the sustainability of water services especially in the rural areas. The sustainability of water projects improves access to water and the standards of living and general welfare of the rural communities. According to Nozibele (1998), since women as the de-facto heads of households and care givers and at the centre of prospects for sustainable rural development, they should therefore be well incorporated in the management of water resources to improve the status of their households.

2.3 Challenges Affecting Women's Participation in Water Resources Management

Despite the widespread recognition of the important role of women in water resources management, from various pronouncements, principles and declarations, efforts to enhance their participation have faced several challenges. As a result, these undertakings by governments have not translated into reality especially in the developing countries. According to the UNDP (2006), in sub-Saharan Africa, access to safe drinking water is far from being realized. This continues to exert heavy burden on women who have to spend many hours searching for water. Further, lack of water has contributed to high food insecurity and high levels of poverty. The problem has affected women's health, children's nutrition and health, women's education and by extension created inequality between men and women. It is therefore, important to address the special needs of women because lack of water affects men and women differently.

In most societies, women are assumed to represent a marginalized group and they experience gross inequalities of formal power and authority in the public sphere. As such, they are denied equal access to and control of resources. In the water sector, for instance, the inequalities are perceived in terms of access to water resources and benefits from water development projects as well as exercise of decision making powers with respect to the management of these resources (Gender and Water Alliance, 2005).

A review of gender-balanced policy in water delivery should acknowledge the intention of improving the lives of women and enhancing their participation. Mjoli (1998) argues that policy positions should aim to break the marginalized position of women in the management of water supply and sanitation. She notes that water and sanitation projects are more sustainable when women have ongoing responsibilities for their operations and maintenance. They are more committed since they are adversely affected by project failure.

Water policies therefore should have a gender-based approach to ensure sustainability. Such an approach would endeavor to enhance women's participation because they are

already disadvantaged, so as to bring them at par with men. This will lead to equity and equality, hence sustainability of the projects. According to Denton (2002), although the crucial role of women in natural resource and environmental management has been recognized widely, discriminatory structures and attitudes still result in deeply entrenched patterns of gender inequality in this area. This in effect has led to low participation of women in water resources management.

Khatun and Ahmed (2004) in a study done in Gujarat, India warns that the rhetoric of women's role as naturally privileged water managers tends to overlook the divergent needs that women and men have in relation to water. She stresses that there is widespread understanding of the impact of water scarcity on women's health, on the drudgery of water collection, and on girls' education. However, women have little voice in water resource planning. The study examined the water policy and institutional reforms in Gujarat, which was at the time confronting its third year of drought. It was found that women's participation was subsumed within the general category of 'stakeholders where 'consultation within communities' signified consultation with men as heads of households and / or community leaders. Women's participation was often reduced to simply labor utilization, particularly for drought relief work.

A study by the International Water and Sanitation Centre (IRC) of community water and sanitation projects in 88 communities in 15 countries Van, (1998) established that projects designed and run with full participation of women are more sustainable and effective than those that do not. It was also found that women's participation was strongly associated with the effectiveness of water and sanitation projects.

In Bangladesh, it was revealed that water projects are designed with the main objective of easing the burden of those who have to collect water from unsafe and far-away sources and to uplift the livelihood patterns of the affected people. This was revealed in a study by Khatun and Ahmad (2004). This study found that till the early 1970's, water sector development initiatives in Bangladesh were designed and implemented without consulting the stakeholders in the identification, design, operations and maintenance of the projects. Women's participation was commonly ignored though they managed water

both for domestic, post-harvest activities and were also involved in small scale income generation activities using water resources. The study established that most of the projects suffered ownership and could not attain desired results. Although the study examined the legal, policy and institutional framework of water resources management, it did not analyze how the various laws, policies and institutions had impacted on the participation of women in the management of water resources in the country.

Although literature has focused more on women as a major social group and their relationship with the environment, it is noted that they are not a single homogenous group and that it is important to address the actual material relationships of different groups of women with nature and the environment (Agarwal, 1998 and Braidotti, 1994). Determining factors include class, caste, ethnicity, kinship, country and social-cultural affiliation. Even within one village women of different age, classes and castes may have very different positions and roles (Davidson, 1998). The same applies to women living in rural and urban areas. The position of a tribal, nomad woman can be completely different to that of her female neighbor from a sedentary family. The current study sought to focus on Kajiado women, who are pastoralists and live in Arid and Semi-Arid Lands (ASALs) of Kenya.

Singh (2006), sought to establish the impact of water policy interventions in bringing about change to the role of women in water resource management in India. His study established that in the water sector, women's participation in decision making within the local governance structure was introduced through the Panchayat Raj' Institution (PRI), that is based on a three tier rural local Government structure, the lowest being village level. Women's participation in the local water governance was ensured through a reservation quota of 33% in the PRI bodies at each level. However, women did not actively participate in the committee and its activities. In many cases, their membership was tokenistic and in meetings they were represented by their male relations, mostly husbands and sons. The reasons advanced for this were essentially related to women's role in the traditional decision- making structures (Singh, 2006). This study did not examine other political, social and economic factors which may have hindered women's participation in managing water resources in the country.

IFAD (2007) in a study done in Ghana found that although policymakers had undertaken efforts to encourage women's participation in water user associations (WUAs), women seldom joined WUAs due to lack of confidence in speaking up for their rights, illiteracy, and social norms which prevent them from taking up any public role. It was further observed that whereas WUAs are required by law to establish a minimum quota of women, the membership is given to local elite women who are often wives of influential farmers and are unfamiliar with the problems faced by the poor women (Wahaj, 2007). The current study focuses on the Maasai women in Kajiado County since they face special circumstances. This is because, according to the Maasai culture, women are not supposed to talk when men are talking (Gitobu, 2003). This situation has a significant effect on their participation in water resources management.

In a case study done on rural women in Uganda by Kabonesa and Happy (2003), it was observed that women suffered greatly due to lack of water. Those who were interviewed during the study cited travelling long distances (about 12 to 15 km) often over steep terrain to collect safe water. However, if a man has to collect water he would have other means of transport at his disposal. One man was quoted saying; "a donkey is used to transport goods especially where vehicles cannot transport due to steep terrain when a woman is sick, it is available for a man to fetch water". The implication being hard work is meant for women and facilitated work for men.

The study further revealed that collecting water 15 km away during dry season can cause conflict at the water source. Women have to spend so much of their time at the well and hence their other obligations cannot be fulfilled. This again is likely to cause disagreements with their spouses and result to domestic violence. Carrying water for long distance and up steep terrain may lead to health risks such as marked cranial depression, frequent backaches and headaches, malformed spine, obstruction birth, and high mother and child mortality rates (UNDP, 2006). Clearly the drudgery of fetching water keeps women from performing other domestic functions, and may result to collecting water from a contaminated source because it is easy to access it. This makes them vulnerable to contracting water borne diseases.

The level of self hygiene among rural people is very low exposing them to communicable diseases. Water borne and related diseases contributed to 30 % of the total mortality in Uganda (UNDP, 2006). This study concluded that although there had been some positive changes in policies and the law, these written concepts were yet to be put into practice. Thus, the situation on the ground revealed that the policy and legal reform had not been effective to the rural women in Uganda.

According to the Kajiado District Development Plan (GOK, 2008), Kajiado County experiences serious water scarcity and people travel an average of 15 kilometers from the homesteads in search for water. On water and sanitation, the Development Plan states that the provision of water for household is usually the duty of women and that this task exploits their energy and time. Women's daily and direct contact with water makes them particularly susceptible to water related diseases thus endangering their health.

The Development Plan indicates that during the plan period, it will be necessary to consult women when it comes to initiation of water projects since women have the incentive to make water programmes work as they are most affected by poor access to water. Like in the Ugandan case cited above, this study examined how poor access to water has impacted on the lives of the women in terms of health, education and morale hence affecting their participation in water resources management in Kajiado County.

2.4 Policy, Legal and Institutional Framework for Water Resources Management

The importance of involving women in water management has been recognized at the global level since the 1977 United Nations Water Conference and the International Drinking Water and Sanitation Decade of 1990 (IDWSD, 1990). The International Conference on Water and the Environment in Dublin (ICWE, 1992) adopted very important principles which were to guide water resources management. The first principle is that freshwater is a finite and valuable resource, essential to sustain life, development and the environment. The second principle is that water development and

management should be based on a participatory approach involving users, planners and policy makers at all levels. The third principle provides that, women play a central part in the provision, management and safeguarding of water, while the fourth and last principle is that water has economic value in all its competing uses and should be recognized as an economic good.

The Rio declaration which was made during the United Nations Conference on Environment and Development (UNCED, 1992) proclaimed twenty seven (27) important principles which were directed to guide states in protecting the integrity of the global environmental and developmental system. Principle number 20 notes that women have a vital role to play in environmental management and development and that their full participation is therefore essential to achieve sustainable development.

Agenda 21 was adopted in 1992 to implement the principles in the Rio Declaration. Chapter 3 thereof calls on governments to give girls equal access to education, reduce the workload of girls and women, making health care responsive to women's needs, bringing women into full participation in social, cultural and public life, ensuring women's participation in controlling environmental degradation, ensuring their access to property rights and eliminating all forms of persistent negative images, stereotypes, attitudes and prejudices against women .

In 1995, the Beijing platform for action also imposed various obligations on the government regarding the role of women. Three strategic objectives were identified in the critical area of women and environment. These were to integrate gender concerns and perspectives in the development of policies and programs for sustainable development, to involve women actively in decision-making and to strengthen mechanisms at the national, regional and international levels to assess the impacts of development and environmental policies on women (Pavel and Fulco, 2009).

Resolution 58/217 of the General assembly, which proclaimed the years 2005 to 2015 as the International Decade for Action, 'water for life' calls for women's participation and involvement in water related development efforts. The water for life decade coincides

with the time frame for meeting the Millennium Development Goals (Vijita, 1996). In addition, the Ministerial Declaration adopted at the International Conference on Freshwater in Bonn (ICF, 2001) states that “water resources management should be based on a participatory approach. Women should be involved and have an equal voice in management, sustainable use and sharing of benefits from the resource. Indeed the role of women in water-related areas needs to be strengthened and their participation broadened” (Rogers and Hall, 2003).

In 2002, the World Summit on Sustainable Development (WSSD, 2002) issued the Johannesburg Plan of Implementation which provides that the implementation of the Millennium Development Goal on safe drinking water and sanitation should be gender sensitive and that access to public information and participation of women should be facilitated.

The United Nations Convention to Combat Desertification (UNCCD) meeting was held in Paris in 1994 with a view to assessing the role of women in areas which face desertification. The Convention stated that there was need to ensure participation of women in the development of programmes to combat desertification and also reduce the effects which are occasioned by drought. The Convention recognized the need to be more urgent in developing countries since their populations were the ones who were mostly affected. Accordingly, the effects of drought cannot be suppressed without the sound management of water resources (Muller and Lenton, 2009).

The African Charter on Human and Peoples’ Rights in 1981 guaranteed that citizens have the right of access to information, participation and justice. These rights were granted in addition to the rights of the citizens ‘to a general satisfactory environment favorable to their development. These provisions by extension may be interpreted to secure the participation of women in the various water management practices and also in the decision making processes. Furthermore, Article 2 to the Charter eliminates all forms of discrimination against women. Since most African societies are male dominated, it means that women are poorly represented in the various decision making processes both at the local and the national level. These provisions, if implemented, will have far reaching

effect on the participation of women in the management and coordination of water resources (Biswas, 2004).

Article 34 of the East African Community Protocol on Environment and Natural Resources Management provides that states shall adopt common policies, laws and programmes relating to access to information, justice and participation of the public in the environment and natural resources management. The protocol recommends that states adopt policies of promoting people's participation to make water supply and sanitation sustainable, reliable and cost effective through the mobilization of the local communities. On women's participation, the protocol states "a number of development activities concerning water and sanitation can be initiated in this area for improvement of the livelihood of the people especially women. Because women have accumulated knowledge about water resources, they are the most motivated to ensure that water supply and sanitation facilities are in good order and they know from experience the vital contribution that both water and sanitation make to their well being .

In Kenya, significant efforts to enhance the participation of women in development of the country have been made. This includes the environment and water sector as reflected in various Government policies, development plans and programs, ratification of various international instruments as well as other gender related legal reforms. The Constitution of Kenya, 2010 provides that every person has a right to a clean and healthy environment as well as a right to clean and safe water in adequate quantities. It is also provided that women should be given equal opportunities with men in the development of the country. In this regard no more than two thirds of the appointive or elective positions should be held by the same gender. In effect, it follows that even in water resource management; women should be given equal opportunities with men to participate.

Vision 2030 recognizes that women play a critical role in the social and economic development of any nation. However in recognizing that women are underrepresented at all major decision making levels within Government, the Vision 2030 proposes that women be empowered through access to resources, education, training and health care. The country's development agenda as expounded in the Vision is to transform Kenya

into a newly industrializing middle income country providing a high quality of life to all its citizens in a clean and secure environment while, simultaneously meeting the Millennium Development Goals (MDGs) for Kenyans by 2015.

The government established the Ministry of Gender, Children and Social Development in 2008. This was done through a Presidential circular No. 1 of May 2008. In its strategic plan of 2008 – 2012, the Ministry embraced MDG number 2 which commits Kenya to promote gender equality and women empowerment as an effective way to combat poverty, hunger, and diseases in order to stimulate sustainable development (GOK 2008). One of the national challenges stated in this strategic plan is that “while women account for slightly more than half of the total population (50.7 per cent) and comprise a large voting population in Kenya, they are still under represented in strategic decision making processes. Glaring gaps still exist in access and control of resources and social economic opportunities”.

Following the Water Master Plan, the Ministry of Water and Irrigation formulated Sessional Paper No. 1 of 1999, which is the National Policy on Water Resources Management and Development in Kenya. This policy paper recognized the importance of enhancing participation in the water programmes by the local communities and also the importance of incorporating gender issues as critical to sustainable water resources management. Pursuant to this sessional paper, the Water Act, Cap 372 was repealed and subsequently the Water Act of 2002 was enacted. The latter Act provides the current legal and institutional framework for the management of water resources.

The Water Act of 2002 has given greater emphasis to water resources conservation, management, and protection as well as to stakeholder’s participation in water resources governance. It provides for a decentralized structure which involves participation of all the all stakeholders. These aspects form part of the domestication of the internationally agreed principles of water resources management in the framework of Integrated Water Resources Management (IWRM). These are at the center of the mandate given to the Water Resources Management Authority (WARMA) through the water sector reforms (GOK, 2002).

However, despite the policies, the law and institutions providing for the involvement of local communities, the stakeholders and women in water resources management; this has not been realized in many parts of the country. A study done in Kericho by Were and Roy (2008) established that committee and association membership in the existing water associations is exclusive to men. It was established that the only registered female member of Chesilot water project had recently relinquished her position to her son. During group discussions it was also revealed that it is the men who had taken lead roles in initiation and implementation of the projects. On the other hand, women were responsible for preparing meals and child care and could not participate in the meetings. They were the ones to prepare meals when meetings are held in their homes.

A focus group discussion with women in the absence of men revealed that women could not participate when men were there. Instead they opted to form separate groups with their own committee. For example, the Kiptegan women's group was initiated after women felt marginalized in the water project. One woman was quoted saying, "After members meet and agree on those to be given official positions, women are mostly left out. The only option for women is to form their own group within the project and elect their own officials. For the women group, they intend to finance part of the project costs. The women can contribute an amount decided by them in order to aid in the financing of the project".

In another study conducted in the Upper Nyando River Basin by Were (2008), it was found that in one community where obstacles to organize were overcome and a successful piped water system installed, women were able to use the time saved from water collection to enhance household tea production and establish a group that has generated new income from casual labour and the production and sale of new crops. In other communities, however, it was established that men were not sensitive to how lack of access to water imposed a heavy burden on women. During the study a key informant quoted a man in a community meeting where water projects were being discussed as having said, "*When water is available at home, what will the women do? Go sleep around?*" Subsequently the said meeting decided not to build a water project. Out of the

50 people present, only 2 were women. This is a clear indication that women were not participating in decision making forums. If they were, the decision of the meeting could have been different and could have most likely resolved to commence the water project. In the current study, the social- economic and political factors which hindered women from participating in water resources management were not examined.

A study in Ukunda by Suda (2006) confirmed that women and children are generally responsible for domestic water collection and management. Women make choices about the water they collect. They must decide between a water source that is distant providing higher quality water and one that is near but providing lower quality water. According to, the study findings, the amount of time women spend collecting water affects the amount of time they have for education and paid work. In Kenya, as in many societies, women's and children's reproductive work and other domestic labor are not considered "real" work. Suda (2006) posits that social and cultural norms have naturalized women's domestic roles. Cultural norms in much of the world most likely serve to undervalue domestic work. The study dwelt on how to expand the coverage of safe and productive water supplies by empowering individual household and community groups to undertake and operate appropriate water supply infrastructure by protecting and harnessing water from natural springs. The present study was more concerned with empowering women in order to enhance their participation in water resources management.

A study by Ghattuba (2004) in Kajiado established that Education is not a priority in pastoralists' communities and parents preferred marrying off their girls for dowry to sending them to school. This study also confirmed that women in Kajiado have less formal education, lack skills and managerial knowledge, have fewer economic resources and thus they are less integrated into the national economy. The study focused on the relationship between water management and the social economic status of rural women such as education, family size and income. This is a narrow approach compared to the present study in that it considered water management in only three aspects namely, water harvesting, water recycling, and water storage. The study did not examine how the existing legal, policy and institutional framework on water resources management in

Kenya had influenced the participation of women in the management of water resources in Kajiado County.

In a critical review of the Water Act of 2002, Mumma (2005) observed that in the new institutional set up, water provision is now seen as the role of private enterprises and non-governmental organizations. Kenya's current water policy appears to be more biased towards the regulation of large-scale private and non-governmental suppliers of water, rather than towards the facilitation of small community groups. Furthermore, the role of women is not expressly addressed. According to Mumma (2005), policy makers and planners must see community groups as important water service suppliers and adjust policies and programmes accordingly.

Nevertheless, it is clear that the role assigned to non-governmental activities, particularly self-help community groups, by the Water Act is rather marginal. This law does not recognize the existence in Kenya of a pluralistic legal framework and assumes that the legal framework in Kenya is comprised of a monolithic and uniform legal system which is essentially state centric in nature. Kenya's rural poor, typically, live within normative frameworks' in which state based law is no more applicable and effective than customary and traditional norms. The Water Act, however, seems to ignore this reality.

The current study examined the effectiveness of the existing water policies and laws in the context of the Masai customary and traditional norms regarding ownership of land and water resources, role of women in decision making, and also where access to safe drinking water and sanitation is poor. Typically, the people without access to reliable water services often represent the poorest and most marginalized of the Kenyan people. These are the people who are least likely to take advantage of, and benefit from the legal framework in the Water Act 2002 for the provision of water services, and the ones likely to suffer most from inadequate management of water resources.

Another study by UNDP (2006) aimed at addressing various challenges in water governance in Kenya by incorporating the principles of human rights approach, noted that improved access to water supply and appropriate sanitation is a social justice and

human rights issue, and is fundamental to the elimination of poverty and the achievement of the Millennium Development Goals. However, for most urban and rural poor groups this access remains poor. The study identified gender mainstreaming as one of the important tools that are relevant to advancing the rights based approach in improving water governance and enhancing women's participation in water resources management. It was particularly established in the study, that although the sessional paper number 2 of 2006 on gender equity and development provides the operational framework for implementing the national policy on gender equity and development, concrete lines of action and indicators for promoting and monitoring gender equity within the water institutional and legal framework have not been properly designed.

A rapid assessment study done in Kenya (GWA and IEW, 2009) sought to establish the extent to which gender mainstreaming has been advanced within the framework of reforms driven by Kenya's National Policy on Water Resources Management (Sessional Paper No. 1 of 1999) and the Water Act of 2002. This study was done at the National level and 8 national institutions were selected for the survey including the Ministry of water and Irrigation, the Kenya Water Institute and the Water Resources Management Authority. One of the key findings was that women are still not adequately represented in decision making at the national level. Out of the 8 institutions, only one had achieved 30% representation of women in the board composition.

Article 43 of the Constitution of Kenya provides for certain economic and social rights. Every person has the right to be free from hunger, and to have adequate food of acceptable quality and a right to clean and safe water in adequate quantities. Proper management of our water resources is key to realization of these rights while women's participation is a prerequisite to sustainable water resources management. Against this background, this study is an attempt to enhance women's participation in water resources management in Kajiado County, GOK (2010).

From the literature reviewed, it is clear that women have a special relationship with the environment and a central role to play in water resources management. Their participation in water resources management is associated with success of water plans,

programs and projects and in the end this benefits entire families because women are traditionally the family caregivers. However, literature shows that despite the policy and legal pronouncements by the government, women are not yet participating effectively. This reinforces the need to carry out research with the aim of identifying the factors hindering women from participating in water resources management which will inform policy and legal reforms.

2.5 Theoretical Framework

This study is underpinned by three theories namely, the Ecofeminism Theory, the Theory of Change, and the Marxist Feminism Theory whose details are discussed in the following sections.

2.5.1 Ecofeminism Theory

Women's perspectives and values for the environment are somewhat different from that of men because they give more to protecting and improving the environment. Various studies have shown that women have a stake in the environment and this stake is reflected in the degree to which they care about natural resources. The deep connection between women and the environment comes from the daily interaction between them (Breton, 1998).

Agarwal (1998), succinctly describes four main overlying precepts in ecofeminism theory. The first is that ecofeminism explores the commonalities between gender oppression and environmental degradation mainly caused by male western domination. The second states that men are more related to culture and that women are related to the environment and hence both women and the environment have been subjugated by men. Thus women and the environment share a common inferior position. Thirdly, oppression of women and the oppression of nature have occurred simultaneously and thus women have a responsibility to cease male dominance over both. Fourthly, ecofeminism seeks to combine feminism and ecological thought, as they both work towards egalitarian, non-hierarchical structures.

It has been argued that development, which was conceived as a Western Project to modernize the Post-colonial societies, did not bring the promised improvement in the living conditions of the people in the South. Instead the development contributed to the growth of poverty and to an increase in economic and gender inequalities. This was due to over-exploitation of natural resources and the degradation of environment through pollution which further diminished the means of livelihood of poor people, particularly women, hence, this development was not sustainable (Agarwal, 1998).

As environmental degradation in the South accelerated, fuel wood, animal fodder and water became increasingly scarce in many areas, and those most severely affected were the women who needed to collect these items for the sustenance of their families. In women's attempts to conceptualize sustainable development, the recognition of the connections between the domination of natural environment became apparent. In the South this recognition stimulated the debate on women, environment and sustainable development (WED) within the development context while in the North, it has given rise to nature feminism and ecofeminism (Braidotti, 1994).

Breton (1998) argues that activities of various outstanding women illustrate the successful efforts to place women's interests on the environment and development agendas globally. Opportunities have been created for a large variety of women, especially women from the grassroots who are most affected, to voice their concerns even in international forums where solutions to the global environment crisis are being discussed. Since the evolution of the debates on WED, there has been a shift in positions and political priorities. While earlier the emphasis was on women as victims of the environmental crisis, it shifted to their roles as efficient managers of the environment and natural resources. The argument of the increased participation of women in environmental management has been derived from their privileged knowledge and experience of working closely with the environment (Braidotti, 1994).

The role of women as environmental managers has also been conceptualized from the Feminine Principle which is based on the assumption of women's special empathetic and nurturing capacities in relation to nature. The net result of both positions is that women

are seen by many people involved in the women environment and development debate as privileged environment managers, or the source of solutions to environmental crises.

The growing recognition of the connections between the crisis in development, the deepening global environmental crisis, and the growth of poverty and gender inequalities opened the way for the integration of social aspects in the proposals for sustainable development. As a result women's voices have been added to the debates on sustainable development stressing the social aspects of sustainability. Jigging, (1994) argues that usually, the neglect of women and destruction of the environment within the development process are compared which basically stresses the institutional nature of the problem. If only women and the environment were considered in development practice the environmental crisis could be solved. This is because consideration of both "poor third world women" and the environment is seen as crucial for the attainment of sustainable development (Agarwal, 1998).

The conceptualization of the women/nature connection in this type of argument is often not explicit, but rather implied as 'special', that is, inherently closer than that between men and the environment. Davidson (1998) argues that the sexual division of labor usually forms part of the argument that women depend on nature directly for survival because they collect water, fuel and fodder for domestic use, while men are engaged in cash crop production for the market. Women's increased workload due to environmental degradation is another important element which in practice leads to a call for the implementation of more women's development projects in fields related to the use of natural resources. Women therefore are believed to know a lot about natural resources and processes and to have solutions to environmental problems. This theory forms the foundation and justification for participation of women in water resources management.

2.5.2 The Theory of Change

The study also applied the Theory of Change, which postulates that poor girls and women have the ability to transform their lives if they are provided with the facilitative factors (Cech, 2009). The theory states that there is the need for the elimination of the existing inequalities against poor women and girls in the coordination and management of water

resources. This theory calls for certain actions to be undertaken in order to eliminate the bias against women.

In this regard, the theory expounds the view that there is need to challenge governance, societal structures and other beliefs which are likely to prejudice efforts for the involvement of women in the management of water resources (Pavel & Fulco, 2009). The theory argues that the involvement of women will lead to sustainable management of water resources. This will be significant since it will enable the present generations to meet their water needs while not prejudicing the ability of future generations to meet theirs. The theory states that women and girls have the right to enjoy equal rights to those of men and boys, including rights to participation and involvement in decision-making, regarding use and management of natural resources.

According to Olli & Biswas (2005), there is a connection between the ideology of participation and democracy. They further contend that the need for the participation of both men and women in the management of water resources has origins in the third world development. This therefore calls for the inclusion of both genders in the development of project design and its eventual implementation. The theory of change further contends that failure to include both genders in the decision making processes and the eventual management of water resources will result in a failure of the projects (Cech, 2009).

2.5.3 Marxist Feminism Theory

Another theory which explains why women may not be effectively participating in water resources management is the Marxist Feminism Theory. The theory postulates that class relations are the causes of women's oppression by men and that men control the means of production and by extension the society's economy and social norms. According to the theory, there are two social classes in the society. The ruling class or the bourgeoisie, made up of the minority of the population, and the subject class or the proletariat to which the majority belong. The power of the ruling class comes from its ownership of the means of production. It projected that the members of the proletariat will eventually realize that they were being exploited and oppressed. They would then join together to

overthrow the bourgeoisie either by force or voting their own representative in the Government (Haralambos, 1999).

Accordingly it can be said that a person's class and position in the society influences many areas of their lives. In particular, class has an important effect on life opportunities. These are chances of obtaining those things defined as desirable and avoiding those things defined as undesirable. Most societies in Sub Saharan Africa are patriarchal where the men own and control the means of production; inheritance is also for the male children while the girl child is married off.

2.6 Conceptual framework

The conceptual framework used in the study is illustrated in Figure 2.1 and is informed by the three theories described. The ecofeminism theory informs the concept that the role of women as family care givers places them very close to water resources. Women are likely to take care of and nurture the water resources the same way they take care of their families. Hence the need to empower them in order to enhance their participation in water resources management. According to the theory of change, women have the ability to transform their lives and that of their families if they are empowered. Marxist feminism theory posits that class relations are the causes of women's oppression by men hence their lack of participation in the management of water resources.

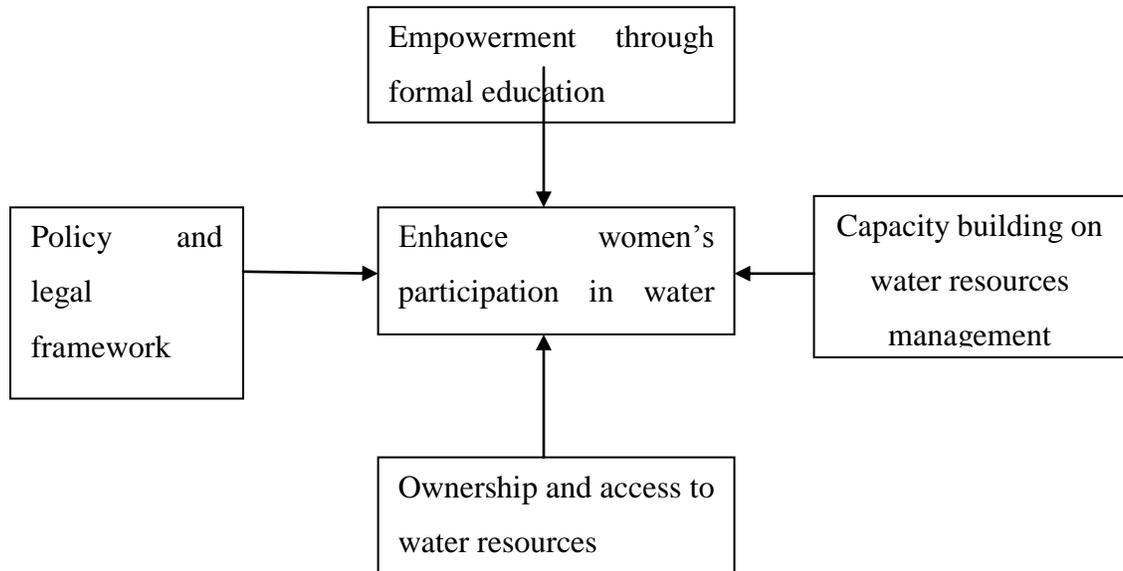


Figure 2.1: Conceptual Framework of the Study

The three theories reveal that several factors may hinder women from participating in water resources management. These include social, cultural, economic and political and they determine women's social and economic status. If the status of women in the society is changed through empowerment, their participation in water resources management will be enhanced. The conceptual framework illustrated in Figure 2.1 shows the relationship among several factors that have been identified as important to the issue that was addressed in the study. These include the culture, lack of education in water resources management, and lack of ownership and access to water resources. As is shown in Figure 2.1, appropriate policies and legislation, ownership of and access to water resources, women's education and capacity building would enhance participation of women in water resources management in the County.

CHAPTER THREE

STUDY AREA AND RESEARCH METHODOLOGY

3.0 Introduction

The chapter provides a description of the study area and the methodologies used followed in conducting the research. It also describes the study design, techniques and methods of data collection and analysis, and lastly the ethical considerations of the study.

3.1 Study Area

3.1.1 Location

Kajiado County is located on the extreme southern part of the Rift Valley of Kenya. The County borders Narok to the West, Nakuru, Kiambu and Nairobi to the North; Machakos to the East, Taita Taveta to the South East and the Republic of Tanzania to the South (Figure 3.1). The County covers an area of 21,902.9 km² and has seven divisions namely, Ngong, Isinya, Loitoktok, Magadi, Namanga, Central Kajiado and Mashuru (GOK, 2008) as indicated in the Figure 3.2 and the Table 3.1

3.1.2 Physical Features

Plains and occasional volcanic hills and valleys are the main physical features in the County. The land varies in altitude from about 500 meters around Lake Magadi to about 2,500 meters in the Ngong hills areas. Topographically, the County is divided into three different areas namely; Rift Valley, Kapiti and Central Broken Ground. Rift Valley covers the western part of the County running from North to South, the Athi Kapiti plains cover the North Eastern parts of the County, while the central hills and plains cover the Central Division all the way to Namanga, the Amboseli plains covering the Amboseli National Park and the flat plains drained by the Kiboko and Nolturesh Rivers. The major rivers in the County are Athi, Ewaso Ngiro, Olkejuado and Nolturesh. Most of the County is drained by seasonal streams and rivers (GOK, 1995).

**CHALLENGES AND POLICY OPTIONS FOR ENHANCING
WOMEN'S PARTICIPATION IN WATER RESOURCES
MANAGEMENT IN KAJIADO COUNTY, KENYA**

BY

TERESIA WANJIKU GATHAGU

**A Thesis Submitted in Partial Fulfilment of the Requirements for the
Degree of Master of Arts in Environmental Policy, of the University of
Nairobi**

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Figure 3.2: Map of Kenya showing the location of Kajiado County (Source: GOK, (2008)

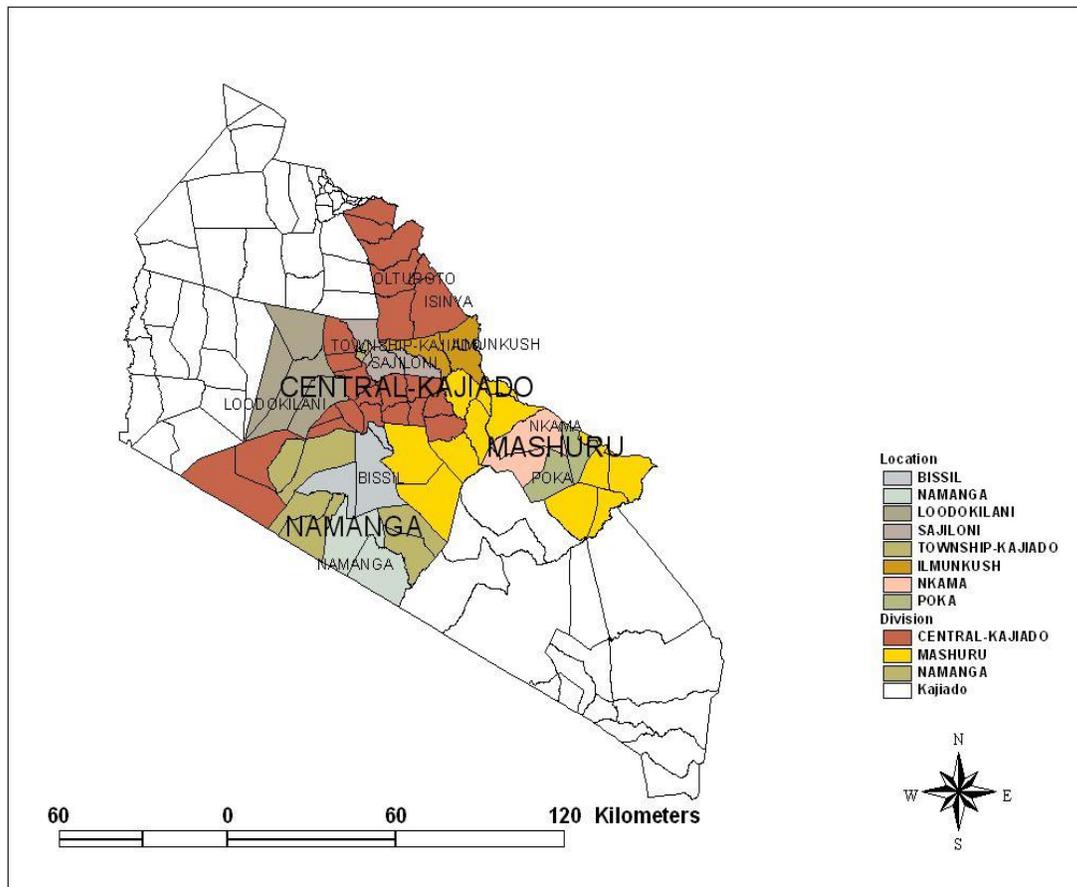


Figure 3.3:Map of Kajiado County showing the 9 locations of the study (Source: University of Nairobi, Geography Department (2012)

Table 3.1 Divisions in Kajiado County

Division	Area Km²	No. of Locations	No. of Sub-Locations
Ngong	3698.1	10	29
Magadi	2640.3	4	13

Isinya	1066.3	3	7
Central	2909.7	10	27
Namanga	2238.0	5	11
Mashuru	2994.2	9	17
Loitokitok	6356.3	6	16
Total	21,902.9	47	120

Source: District Commissioner's Office Kajiado, 2001

3.1.3 Climate and Vegetation

The County has a varied climate, with a bimodal rainfall pattern with the long rains falling between March and May while the short rains fall between October and December. The rainfall is strongly influenced by altitude with the heaviest occurring around Ngong Hills, Chyulu Hills, Nguruman Escarpment and the slopes of Mt. Kilimanjaro. The rainfall ranges from 1250mm near Mt. Kilimanjaro to less than 500mm per annum at Lake Magadi. Temperatures vary in altitude to a mean maximum of about 34⁰ C at Lake Magadi to a mean minimum of 22 c at Loitokitok and Ngong (GOK, 2008)

The vegetation of Kajiado County is determined by altitude, soil type, and extent of human occupation and utilization of the land. The main vegetation types consist of grassland, scrub and semi desert bush land. The vegetation cover throughout the County varies seasonally with rainfall and grazing intensity (GOK, 1995).

3.1.4 Drainage

Drainage strictly refers to the movement of water through the soil, which is determined by the land topography and the soil type. The major rivers in the district are Athi, Ewaso Ngiro, and Pakase. Most of the district is well drained. However, impeded drainage exists within central parts of the district because of the higher percentage of clay content in the soil. This contributes to seasonal flooding. Information on the surface water hydrology is scanty and no water pollution monitoring is underway. The Ngong Hills form the catchment areas of the upper Athi River. Other rivers originating from these water catchments include Embakasi, Kitengela, Stony Athi and Kiboko River with its tributaries, Olkejuado and Selenkei. The southern and central parts of the district are

served by a number of water sources, some of which are seasonal. These include Uwaso Nyiro, which enters Kajiado through Mosiro. There are also several streams flowing from the eastern face of the Nguruman escarpment and Loita Hills (GOK, 2008).

3.1.5 Population Distribution

The population distribution in Kajiado County is scattered with the trend of settlements restricted along water points, urban and rural shopping centers. On average, the County is sparsely populated with an average density ranging between 2-10 persons per kilometer. The dominant tribe is the Maasai, other tribes being Kikuyu, Kamba, Luo and Luhya .The total Population was recorded at 466,138 with 238,012 males and 228,126 females (GOK, 2008).

Semi-nomadic pastoralism has been the traditional Maasai mode of life, practicing on land that was communally owned. However, this lifestyle has undergone changes due to ongoing land adjudication and sub-division of group ranches leading to individual land tenure system. This has increased the rate of land sales thus opening to immigration especially in the relatively high agricultural potential areas of the district to farming communities from other parts of the country. These areas include Ngong, Nguruman and Magadi divisions and foot slopes of Namanga hills (GOK, 2008).

3.1.6. The Water Situation

As the County is arid and semi-arid, about 95% of its streams are seasonal, while about 55 are perennial. The perennial streams are found at the foot slopes of Mt. Kilimanjaro, Ngong Hills, Ngurumani Escarpment and Namanga Hills. Other sources of water include boreholes, dams, ground catchments/pans, wells, water holes, springs, roof catchments and rock catchments. The average distance to nearest potable water point is 15 km to 10 km during the dry season and 10 to 5 km in the wet season. The water sources in the county are distributed as shown in table 3.2 (GOK 2008).

Table 3.2: Distribution of Water Resources in Kajiado County

Water source	Number
Permanent rivers	3
Shallow wells	1,000

Unprotected springs	22
Protected springs	None
Water pans	400
Water dams	145
Boreholes GOK/Community	436
Boreholes Private	300
Boreholes Institutional	264

Source: (GOK, 2008)

Kajiado is an arid and semi-arid land (ASAL) County with livestock keeping being the predominant economic activity. Most of the land (92%) is non-arable, while only 8% is said to support subsistence farming. Only two cash crops (cotton and Jatropha) grown in the County but in small quantities. Being an ASAL area, only 10,500 Ha is under food crops. Horticulture growing is being intensified through small scale irrigation schemes in Magadi Division and individual farmers using boreholes (GOK, 2008).

3.2 Study Design

The study design used was descriptive in nature. Borg and Gall (1989), noted that descriptive study determines and reports the way things are and commonly involves assessing attitude, opinions towards individuals, organizations and procedures. Descriptive survey design was relevant to this study because the study sought to collect data from respondents about their opinions on the role of women in water resources management and how the participation of women would be enhanced. According to Mugenda (2008), descriptive studies are conducted in communities to establish the extent of a range of social issues such as health, education among others. The studies are also limited in geographic scope and hence tend to be logistically easier and simpler to conduct. In this regard this design was preferred for the study.

A semi-structured questionnaire was administered in the study area and qualitative data collected using focus group discussions and key informant interviews and direct observations. An interpreter facilitated communication by translating the questionnaire and the interview schedule from English to Maasai language. The research was mainly

conducted in the Kiswahili and Maasai languages since the Maasai women constituted the sample. Responses were translated and appropriately recorded.

3.3 Study Population and Unit of Analysis

According to Mugenda and Mugenda (2003) target population refers to people, events or objects to which the researcher wishes to generalize the results of the research. The study was done in three out of the seven Divisions of the County. These are Central Kajiado, Namanga and Mashuru. The three Divisions were randomly picked: One third of the locations in each of the sampled divisions were then randomly picked as shown in Table 3.3

Table 3.3: Total Population in the selected Divisions of Kajiado County

Division	Location	Population per location	Female	Male	No of household
Namanga	Bissil	15355	7933	7422	3567
	Namanga	18515	9138	9377	3508
Central	Elangata WUAS	4648	2256	2392	941
	Loodokilani	5173	2528	2645	1036
	Sajiloni	7484	3825	3659	1529
	Township	14956	7372	7584	4256
Mashuru	Ilmunkush	8068	3916	4152	1639
	Nkama	11449	5795	5654	2496
	Poka	5567	2797	2770	1184
	Total	91215	45560	45655	20156

Source-Kajiado District Statistics office

According to the Maasai culture, women are not supposed to give information or speak to strangers. Women also do not speak in the presence of men. To overcome this obstacle, the local administration stepped in and convinced the women to give information to the research team. It also became necessary to hold focus group discussions exclusively for women so as to enable them express themselves freely.

3.4 Sampling Procedure and Sample Size

Sampling is the process of selecting a number of individuals for a study in such a way that the individuals selected represent the larger group from which they were selected. Sampling had to be done since it was not possible to study every member of the target population as this would have been very costly and time consuming. In order to have a representative sample, we made a sampling frame in the selected locations. The sampling procedure was determined by the research question and the objectives of the study. Since the research question is descriptive, simple random sampling method was found appropriate.

The total population of the entire community living in the three divisions is approximately 91,215 residents and to sample this we used the sample determination formula where the population in the target population for this study is approximately 20,156 households. From this target population a representative sample was drawn. Sampling was done to reduce the time and cost of research survey but the size was large enough that the findings can be used to infer on the population included in the research study. For this study, the sample obtained by calculating the sample size from the target population by applying the Yamane (1967:886) formula. Yamane (1992).

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = Sample size,

N = Population size

e = Level of Precision.

At 95% level of confidence and $P=5$

$$n=20156 / (1+20156\{0.05\}^2)$$

$$n=392.21$$

$$=392$$

Thus a sample size of 392 respondents was required. Due to the time and financial constraints the researcher tried to contact 50% of the sample size and this translates to 196 respondents.

The number of household sampled per every location was computed from the total number of household in the location divided by the total number of households in the nine locations multiplied by the targeted sample of 196.

3.4.1 Purposive Sampling Technique

In purposive sampling, knowledge, experience and judgment is used to select the most desirable elements for a given study. Accordingly, this method was used to select the key informants for this study since it allows for the selection of sample elements that gave in-depth understanding on matters (Kothari, 2009) to do with the challenges faced by the women in managing water resources in the County. A total of 196 respondents were selected for this.

It also turned out that most of the villagers had on many occasions been promised benefits that they had waited for in vain, thus they were quite resistant, and also a number of them viewed such activities as those that should generate income and demanded some amount of money before returning the questionnaires or participating in the focus group discussions. However, this number of respondents was considered to be a fair representation of the population because the population is basically homogeneous. According to Mugenda (2008), the criteria for determining a reasonable sample size is not very clear even with the help of computer packages. In our case, sample size was also limited by the availability of resources

3.5 Methods of Data Collection

The field activities were started by establishing contacts with various government officers in the water sector at the County level. The officers contacted were the County Water Officer at the Ministry of Water and Irrigation in Kajiado and the officers from the Water Resources Management Authority. At the Divisional level, the Divisional officers, chiefs and sub-chiefs were the contact persons. Through the Ministry of Culture and Social Services at Kajiado, contacts of women who had formed community based organizations were obtained. This is how we got the focus groups, key informants and individual respondents who filled and returned the questionnaires.

3.5.1 Questionnaire Administration

A semi-structured questionnaire with open ended and closed questions was administered to the women respondents. This covered a wide range of social and economic aspects of the respondents (see Appendix 1). This technique was used to explore the individual's opinions on issues related to management of water resources. Open-ended questions gave the informants an opportunity to give their views widely. This way the informants' subjective and personal views as well as observations and perceptions concerning the role of women in the management of water resources were captured. Opportunities for substantiation and probing were provided through requesting the respondents to clarify their responses by explaining or discussing further. Some of the advantages of the use of the questionnaires is that the responses are gathered in a standardized way, so questionnaires are more objective, certainly more so than interviews.

Generally it is relatively quick to collect information using a questionnaire. However in some situations they can take a long time not only to design but also to apply and analyses. Potentially information can be collected from a large portion of a group. This potential is not often realized, as returns from questionnaires are usually low. Some of the shortcomings of the use of questionnaires include questionnaires are standardized so it is not possible to explain any points in the questions that participants might misinterpret. This could be partially solved by piloting the questions on a small group. Open-ended questions can generate large amounts of data that can take a long time to process and analyze. Respondents may also answer superficially especially if the questionnaire takes a long time to complete, (Miles and Hubermanne, 1994)

3.5.2 Key Informant Interviews

Key informant interviews are qualitative in-depth interviews with people who know what is going on in the community. The purpose of key informant interviews is to collect information from a wide range of people—including community leaders, professionals, or residents—who have firsthand knowledge about the community. These communities' experts, with their particular knowledge and understanding, can provide insight on the nature of problems and give recommendations for solutions. Advantages of this research

tool are that detailed and rich data can be gathered in a relatively easy and inexpensive way.

It also allows interviewer to build or strengthen relationships with the respondent and clarify questions. They can raise awareness, interest, and enthusiasm around an issue and lastly they can contact informants to clarify issues as needed. Some of the disadvantages in the use of the key informants' interview are that selecting the "right" key informants may be difficult so they represent diverse backgrounds and viewpoints. It may be challenging to reach and schedule interviews with busy and/or hard-to-reach respondents and lastly difficult to generalize results to the larger population unless interviewing many key informants. (Carter & Beaulieu, 1992)

Key informant interviews were conducted to collect data from those who had more information and experience regarding water resources management and in particular the participation of women. A total of eleven people were interviewed. These were mainly government officials including the County Water Officer, County Development Officers, Chiefs and Sub Chiefs, officials from three Non-Governmental Organizations namely, World Vision, German Agro Action (GAA) and African Medical and Research Foundation (AMREF). Other key informants were from Community and Faith based Organizations.

Women who for a long period of time had been in the forefront in the management of water resources and who had at least secondary education level were also identified from the sampled locations. This is because those with secondary education had a better understanding of the issues under discussion and could also express themselves better compared to those with lower education levels. Other women who gave useful information were those serving as officials in various borehole management committees and other community based organizations. These women were interviewed using a key informant guide shown in Appendix II.

3.5.3 Focus Group Discussions

A focus group, or focus group interview, is a qualitative research tool often used in social research, business and marketing. Focus groups are small group discussions, addressing a specific topic, which usually involve 6-12 participants, either matched or varied on specific characteristics of interest to the researcher, (Maxwell and Loomis, 2002).

The study conducted discussions with a total of six focus groups, two being randomly picked from each of the sampled divisions. Each group consisted of six to eight members. The participants were women who were considered to have participated in various committees of water resources management and were holding key positions of leadership in such committees and who were ready to share their ideas and knowledge on water resources and its management. Women who were taking care of their households by providing water and food were also included in the focus group discussions. The selected women were usually involved in making decisions regarding the acquisition and use of water and also due to their familiarity and better understanding, especially on their role in water resources management. They offered information and ideas on management of water resources and how their participation in this field would be enhanced. A focus group discussion guide was used as shown in Appendix 111

FGD are useful research tools as they are relatively easy to assemble, inexpensive and flexible in terms of format, types of questions and desired outcomes, good for groups with lower literacy levels. Open recording allows participants to confirm their contributions, provide rich data through direct interaction between researcher and participants, they are spontaneous, participants not required to answer every question; able to build on one another's responses; and lastly help people build new connections. Some of the shortcomings of the use of FGDs are that findings may not represent the views of larger segments of the population, requires good facilitation skills, including ability to handle various roles people may play (“expert”, “quiet” tough rich, data may be difficult to analyze because it is unstructured and possible conformance, censoring, conflict avoidance, or other unintended outcomes of the group process need to be addressed as part of the data analysis.

3.5.4 Direct Observations

Direct observations were useful in providing information which respondents could not have disclosed. It served as a link between knowledge and practice. Direct observation was used to document the day-to-day activities of the people and the participants involved. This provided additional information on water quality, roles of women, social status, standards of living, their health and that of their children. The observations also gave insight on how women participate in water management in the County. Observations were recorded and used to corroborate the responses that were received from the questionnaires, key informant interviews and focus group discussions. Photographs were taken on the site during the observations and are annexed to the Thesis as Appendix IV.

3.5.5 Document Analysis

Documented information was reviewed through literature review and it entailed gathering of existing information from credible and recognized sources. Literature available that is essential, desirable, current, accurate, relevant and useful was used. The information was obtained from libraries institution, government offices such as the Ministry of Water and Irrigation, Ministry of Culture and Social Services, offices of Non-Governmental Organizations which deal with water resource issues. Other sources included journals and periodicals, theses and dissertations. Publications presented in conferences, books, media sources and the Internet were also used.

3.5.6 Methods of Data Analysis

Data analysis consisted of two categories, descriptive and inferential statistics. Responses obtained through questionnaires, focus group discussions and key informant interviews were put into categories and themes so as to answer the research questions. The data from the field were analyzed and presented in form of figures and tables. Qualitative data were also analyzed according to emerging issues and presented in narratives as well as direct quotes. The findings were presented in frequency tables of percentages.

3.5.7 Challenges Encountered

Some members of the research area demanded a lot of money to participate, and some were resistant and rejected to be involved in data collection. In addition, the area was

large and thus became difficult in achieving the expected number of respondents. Some of these challenges, particularly lack of sufficient resources and expansive nature of the area, were addressed by the support from the enumerators who helped in administering the questionnaire and granted much support during the focus group discussions and in the identification of the key informant interviews. There was also close working relationships with the divisional administrators such as the area chiefs and sub-chiefs who served as useful links with the respondents.

3.5.8 Ethical Considerations

The study ensured informed consent from the respondents by asking them to sign a written consent form. While collecting the data, the respondents were assured of their privacy and confidentiality of the information given. Privacy was ensured by not recording the names of the respondents anywhere. Some respondents sought to know whether the study would lead to some form of assistance from government or other donors. It was ensured this privilege was not abused and that respondents understood that their responses would be used purely for academic purposes and nothing else.

3.6 Summary

The methodology of the research involved desk study, review of key national and institutional documents and key informant interviews. There was also consultation with key stakeholders in the water sector. It was also established that the water sector lacks a gender policy to govern the sector and that traditional stereotypes continue to hinder the advancement of women in the water sector. This study did not extend to the local level and the present study attempts to fill in the gap by examining the participation of women in water resources management in Kajiado County. The methodology used in our study involved interviews with women at the local level, key informant interviews with non governmental organizations, community based organizations and faith based organizations. These methods were effective in establishing the factors that are hindering women from participating in water resources management.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the data collected from the respondents in the Kajiado County and the information was presented in the tables showing the various percentage responses from the respondents. The data was analyzed using both the qualitative and quantitative methods.

4.1.1 Response Rate

The study targeted 196 respondents in collecting data with regard to enhancing women's participation in water resources management of Kajiado County. From the study, 168 respondents out of the 196 sample respondents participated by filling-in and returning the questionnaires, participating in focus group discussions and also as key informants, making a response rate of 85.7%.

Table 4.4: Response Rate of the respondents per location

Location	Targeted sample size		Response rate	
	No. of Households	Sample size	Fr	%
Bissil	3567	35	30	85.7
Namanga	3508	34	29	85.2
Elangata WUAS	941	9	9	100.0
Loodokilani	1036	10	8	80.0
Sajiloni	1529	15	13	86.7
Township	4256	41	36	87.8
Ilmunkush	1639	16	14	87.5
Nkama	2496	24	20	83.3
Poka	1184	12	9	75.0

Total	20156	196	168	85.7
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4.2 Demographic Information

4.2.1 Age of the respondents

It was determined from the study that majority of the respondents were in the 41-50 age bracket with the highest found in Loodokilani , Sajiloni and Township locations at 38% each. The lowest in this bracket was Namanga location at 35%. This was followed by 31-40 and 50-60 age brackets. Loodokilani location had the highest number of respondents aged 20-30 at 13%. Only two locations, Bissil and Nkama had respondents aged above 60 years at 3% and 5% respectively (Table 4.5).

Table 4.5: Age of respondents

		% response on the age of respondents in years				
	Location	20-30	31-40	41-50	50-60	over 60
1	Bissil	10	27	35	25	3
2	Namanga	10	27	33	25	0
3	Elangata WUAS	11	26	36	27	0
4	Loodokilani	13	25	38	24	0
5	Sajiloni	8	26	38	24	0
6	Township	11	25	38	26	0
7	Ilmunkush	14	28	36	22	0
8	Nkama	10	25	35	25	5
9	Poka	11	26	36	27	0

The women aged 41-50 years considered elderly and hence are respected within the household. Thus they were the managers and decision makers at that level thus they became the best choice for sampling as they are likely to be involved in water resources management. However, those aged 60 years and above were the least in interviewees as most of them had retired from active participation in water resources management. Factors of age and generation are also very important in providing further differentiation among

women. Older women occupy a senior position within the household and enjoy access to different social standing with a set of rights, privileges and responsibilities that are markedly different from that of the younger women.

4.2.2 Gender

On seeking to establish the gender of the respondents, the study findings established that over 90% of the respondents were female. Nkama location had the highest female respondents at 95 %, while Loodokilani had the lowest at 88%. Loodokilani location had the highest male respondents at 12 % while Nkama had the lowest at 5 % (Table 4.6)

Table 4.6 Gender of respondents

Location	% Male	% Females
Bissil	7	93
Namanga	7	93
Elangata WUAS	11	89
Loodokilani	12	88
Sajiloni	8	92
Township	8	92
Ilmunkush	7	93
Nkama	5	95
Poka	11	89

The study chose to interview women in the absence of men as they would give unbiased answers to sensitive information regarding their experiences in water resources management. The Maasai culture prohibits women from speaking in public and more so in the presence of men. Only women participated in the focus group discussions and questionnaires. The few male respondents were found in offices and participated as key informants.

4.2.3 Marital Status of the Respondents

On seeking to establish the marital status of the respondents, most of the respondents were married. The highest percentage of married respondents was in Ilmunkush location at 93% and Namanga had the lowest at 67% .Township and Namanga Locations had the

highest percentage of single respondents at 20% each, followed by Bissil with 14%. Sajiloni and Ilmunkush had the lowest single respondents with 8% and 7% respectively. Namanga, Township and Bissil locations had the highest percentage of widows at 13% , 11% and 10% respectively. Nkama had 5% widowed respondents (Table 4.7)

Table 4.7: Marital status of the Respondents

Location		% response on marital status of the respondents		
		Married	Single	Widowed
1	Bissil	76	14	10
2	Namanga	67	20	13
3	Elangata WUAS	89	11	0
4	Loodokilani	88	12	0
5	Sajiloni	92	8	0
6	Township	70	20	11
7	Ilmunkush	93	7	0
8	Nkama	85	10	5
9	Poka	89	11	0

Kajiado County is mostly occupied by the Maasai community (KNBS, 2009). Their culture mostly makes women to get married at a tender age and the community does not allow women to have children before they are married. Thus the single respondents were few and were mainly found in Namanga, Township and Bissil locations which are more developed in terms of infrastructure and within urban centers. In these areas, women are more educated, are employed and also have some financial income. These women are independent, some do not get married and head their families.

4.2.4 Level of Education

The respondents' education levels ranged from individuals who did not attend school at all to those who had gone up to primary and secondary school, college and university levels. Six out of nine locations had over 40% of the respondents having no education. The highest were Elangata WUAS and Loodokilani locations with 50% and 53% respectively as indicated in Table 4.8

Table 4.8: Education of the Respondents

Location	% Response on the level of education of the respondents				
	None	Primary	Secondary	College	University
Bissil	30	33	28	7	3
Namanga	32	28	27	10	3
Elangata WUAS	50	40	10	0	0
Loodokilani	53	40	7	0	0
Sajiloni	49	34	13	0	0
Township	29	28	25	12	6
Ilmunkush	48	35	10	7	0
Nkama	48	37	10	5	0
Poka	46	34	12	11	0

The respondents who had reached secondary school were 105 on average with the highest being in Township, Poka and Namanga at 12%, 11%, 10% respectively. In Elangata WUAS, Loodokilani and Sajiloni locations, none of the respondents had college education. Only Bissil(3%), Namanga(3%) and Township(6%) locations had respondents who had attained university education. This indicates that the women in Kajiado County have many challenges regarding education and thus lack of proper knowledge and awareness towards management of water resources.

4.2.5 Occupation

Concerning the occupation of the respondents, over 65% respondents indicated that they were house wives. The highest percentage being found in Ilmunkush location at 76% followed by Loodokilani ,Sajiloni and Nkama at 75% each. Township and Namanga had the lowest number of housewives at 55% and 53% respectively (Table 4.9)

Table 4.9: Occupation of the Respondents

Location		Occupation of the respondents in %		
		Self Employment	Formal employment	House wives
1	Bissil	20	20	60
2	Namanga	22	25	53
3	Elangata WUAS	12	14	74
4	Loodokilani	10	15	75
5	Sajiloni	10	15	75
6	Township	25	20	55
7	Ilmunkush	10	14	76
8	Nkama	15	10	75
9	Poka	20	11	69

Those respondents who were in formal and informal employment were found mainly from Bissil, Namanga and Township. These are the locations with infrastructure and where women are also more educated. These findings confirm that most women in Kajiado County are housewives and their primary responsibility is to stay at home and take care of the family by performing domestic chores.

2.2.6 Period of stay in the various Locations

Regarding the period the respondents had stayed in the region/location, the study found that 79% of the respondents had been in the area for 12 years and above. Elangata WUAS had the highest number at 88% followed by Loodokilani (87%) and Sajiloni (85%) as shown in the Table 4.10

Table 4.10: Period the respondents have stayed in the location

Location	% response on the period the respondent has stayed in the various locations		
	0-5 Years	6-12 Years	Over 12 Years
Bissil	6	18	76
Namanga	7	20	73
Elangata WUAS	0	22	88
Loodokilani	0	13	87
Sajiloni	0	15	85
Township	11	23	66
Ilmunkush	0	21	79
Nkama	0	20	80
Poka	0	22	78

It was important to have respondents who had lived in the area for long because the study targeted people who were locals and had proper knowledge of the issues affecting women's participation in water resources management.

4.2.7 Source of Income of the Respondents

The study sought to find out the sources of income of the respondents. According to the findings, Elangata WUAS, Loodokilani and Nkama locations had 84% respondents who had no source of income. The locations with the lowest number of respondents without income were Namanga(37%), Township(40%) and Bissil(41%). This is shown in Table 4.11

Table 4.11: Source of Income of the respondents

Location	% Response on the source of income of the respondents			
	Formal Employment	Sale of Livestock	Farming and other businesses	None
Bissil	21	16	22	41
Namanga	23	17	23	37
Elangata WUAS	0	0	16	84
Loodokilani	0	0	16	84
Sajiloni	0	0	18	82
Township	25	15	20	40
Ilmunkush	0	0	17	83
Nkama	0	0	16	84
Poka	12	0	16	72

Other sources of income were cited as formal employment, sale of livestock, farming and other businesses. Lack of education among the respondents was indicated to be the main reason why there were 0% respondents in formal employment in Elangata WUAS, Loodokilani, Sajiloni Ilmunkush and Nkama locations. According to the Maasai culture, women do not own livestock; hence in Township, Bissil and Namanga locations, the respondents did not receive any income from the sale of livestock. This situation is an indication that women in Kajiado County occupy very vulnerable and subordinate status. They are also dependent on men for their survival because they have no income of their own. The respondents felt that this has created gender inequality.

4.2.8 Sources of Water in the locations

The study established that the main sources of water are boreholes and dams. In all the locations in Table 4.12 stated that dams and boreholes were their main sources of water.

Table 4.12: Sources of water

Location	% Response on sources of water			
	Piped Water	Bore holes	Dams	Springs and Wells
Bissil	15	33	30	22
Namanga	18	35	30	17
Elangata WUAS	11	28	33	28
Loodokilani	13	28	32	27
Sajiloni	11	26	35	27
Township	20	34	35	11
Ilmunkush	14	30	36	20
Nkama	15	32	37	16
Poka	15	35	35	15

Township had the highest percentage (20%) of respondents with piped water, followed by Namanga (18%). These respondents with piped water mainly constituted those who resided in the urban areas in the locations. A sizeable number of people from Poka(15%) and Nkama (15%) had access to piped water from Mt. Kilimanjaro. Other respondents indicated that they obtained water from the springs and wells, majority being from Elangata WUAS(28%), Loodokilani(27%) and Sajiloni(27%). The study also established from focus group discussions and key informant interviews that World Vision, a Non-Governmental Organization had helped the community living in Namanga, Poka and Nkama to tap water up the hill from Mt. kilimanjaro. Other NGOs like Anglo German and AMREF have sunk boreholes and this has benefited the respondents.

4.3 Observed Quality of water

The study sought to establish the quality of water used by the respondents. The respondents rated the water in terms of being clean, dirty and salty. Most respondents said the water was dirty, with the highest percentage being from Elangata WUAS (50%), Sajiloni(48%) and Loodokilani (45%). The few respondents who said the water was clean

were from Namanga (22%), Township (20%) and Bissil (20%). Others said the water was salty as indicated in Table 4.13

Table 4.13: Observed Quality of Water

Location	% Response on observed quality of water		
	Clean	Dirty	Salty
Bissil	20	40	40
Namanga	22	38	40
Elangata WUAS	12	50	38
Loodokilani	13	45	42
Sajiloni	14	48	38
Township	20	35	45
Ilmunkush	14	44	42
Nkama	15	40	45
Poka	15	42	43

The study observation established that in Kajiado County, access to clean water was a big challenge as the priority sought first by the community was water, its quality came second. In areas such as Kajiado town, piped water was limited to several homes where water was supplied only two days in a week. This practice has thus made water business thrive in the area and those who have money depend on private water supply which is supplied using tankers. These findings as they relate to the water situation in Kajiado, agree with the findings by UNDP (2006), that in sub-Saharan Africa, access to safe drinking water is far from being realized.

4.4 Distant between the water source and the homestead

The study established that in four out of the nine locations, all the respondents had to walk for more than 5 kilometers in search of water. The locations which had the highest percentage of respondents who obtained water within 5 kilometers were Township (11%), Bissil (10%), and Namanga (8%). It was also noted from the findings that in all the locations, there were people who walked for more than 15 kilometers from the

homestead to the water point. The highest percentage in this category was in Ilmunkush (14%) while the lowest was in Bissil with 7% as indicated in Table 4.14

Table 4.14: Distance from homestead to the Water source

Location	% Response on distance in kilometers			
	0 – 5	6 – 10	11 – 15	Above 15
Bissil	10	51	32	7
Namanga	8	58	29	8
Elangata WUAS	0	40	48	12
Loodokilani	0	41	46	12
Sajiloni	0	39	47	13
Township	11	58	26	9
Ilmunkush	0	38	48	14
Nkama	5	43	42	10
Poka	11	44	35	10

Majority of the respondents in all the locations walked for between 6 and 10 kilometers in search for water with the highest being Township (58%) and Namanga(58%), the lowest was Ilmunkush at (38%).The small percentage of respondents with water within 5 kilometers was found in urban centers where there was piped water provided by the Government. Private individuals in Township, Bissil, and Namanga had sunk boreholes and piped the water to the homesteads of those who could afford to pay for the service. This is evidence that access to safe drinking water in Kajiado County is far from being realized.

According to the Kajiado District Development Plan (GOK, 2008), Kajiado County experiences serious water scarcity and people travel an average of 15 kilometers from the homesteads in search for water. On water and sanitation, the Development Plan states “the provision of water for household is usually the duty of women”. This task exploits their energy and time. Their daily and direct contact with water makes them particularly susceptible to water related diseases which further endanger their health”.

4.5 How the respondents transported water from the source to the homestead

From the findings, most of the respondents in all the locations carried water on their backs. Loodokilani and Nkama locations had the highest percentage at 58% while the lowest was Township at 45%. Use of donkeys for water transport was also common in all the locations with Township having the highest at 35 % and the lowest was Loodokilani and Nkama at 15% each. Other respondents, 20% and 25% used bicycles as shown in Table 4.15

Table 4.15: Mode of transporting water

Location	% Response on mode of transporting water to homestead		
	Carrying on the back	Use of donkey	Use of bicycles
Bissil	50	25	25
Namanga	50	25	25
Elangata WUAS	60	20	20
Loodokilani	65	15	20
Sajiloni	60	20	20
Township	45	35	20
Ilmunkush	60	20	20
Nkama	65	15	20
Poka	55	25	20

4.6 Effects of poor of Access to Clean Water on Women and Girls

As shown in the Table 4.16, poor access to clean water has adversely affected both women and girls as they are the people culturally given the role to look for water for domestic use by the family. Time wastage and abandoning school were cited as the main problems affecting women as a result of poor access to clean water. Women were also being attacked on the way to and from the water sources by the wildlife and other members from the different villages guarding their water sources. They also suffered illnesses due to carrying water for long distances and consuming contaminated water.

Table 4.16: Effects of Poor Access to clean water on Women and Girls

Location	% Response on effects of poor access to clean water on women			
	Much time wasted	Abandoning Education	Attacked on the way	Illnesses
Bissil	30	40	15	15
Namanga	40	35	15	10
Elangata WUAS	38	36	12	14
Loodokilani	35	40	14	12
Sajiloni	36	28	14	12
Township	38	35	15	12
Ilmunkush	36	38	13	12
Nkama	29	38	12	11
Poka	40	35	15	10

The responsibility of fetching water wastes a lot of time for women and keeps them from performing other domestic functions. It also has wide implications on children's school. The respondents revealed that it is customary for girls to be kept home from school to help their mothers in fetching water. Lack of access to clean water is blamed as one of the major causes of school drop out by girls in the County. Education level among women is therefore very low in the County hence they lack technical knowledge to participate in community development projects especially in water resources management.

Sometimes women are forced by circumstances to collect water from contaminated sources because as it is easy to access it. This concurs with the findings by (Ahmed, 2002) that the rhetoric of women's role as naturally privileged water managers tends to overlook the divergent needs that women and men have in relation to water. She stresses

that there is widespread understanding of the impact of water scarcity on women's health, on the drudgery of water collection, and on girls' education. However, women have little voice in water resource management.

A study by Khatum and Ahmed (2004) revealed that in Bangladesh, water projects were initiated with the main objective of easing the burden of those who have to collect water from unsafe and far away sources and to uplift the livelihood patterns of the affected people. This is not the case in Kajiado County where water is primarily meant for livestock and the needs of women and the burden of providing water for domestic use are not considered a priority in the water projects. The findings also agree with those by Kabonesa and Happy (2003) that women in Uganda suffered greatly due to lack of water, walking 12 to 15 kilometers often over steep terrain to collect water. This affects their health, education and morale. When women spend so much time searching for water, their other obligations cannot be fulfilled and this causes conflicts with their husbands. Further, women are forced to collect water from contaminated sources because it is easy to access these sources.

This study also confirmed that the situation as was identified in the Kajiado District Development Plan (GOK, 2008) had not changed despite the fact that the plan period was coming to an end. The plan states, *"The provision of water for household is usually the duty of women". This task exploits their energy and time. Their daily and direct contact with water makes them particularly susceptible to water related diseases, which further endangers their health"*. The plan had noted that women are walking an average of 15 kilometers from homesteads to the water sources.

4.7 Conflicts between Men and Women Regarding Access to Water Resources

The study sought to find out if there were conflicts between men and women regarding access to water. According to the findings, over 75% of the respondent indicated that there were conflicts between men and women regarding access to water. Loodokilani (84%) had the highest while Township (75%) had the lowest percentage indicating that there were conflicts. The respondents who indicated that there were no conflicts between

men and women regarding access to water were few with the majority being found in Township location at 25 %. Ilmunkush location had the lowest percentage at 17% as indicated here below in table 4.17.

Table 4.17: Conflicts between Men and Women Regarding Access to Water

Location	% Response on whether there were conflicts between men and women regarding Access to Water Resources	
	NO	YES
Bissil	20	80
Namanga	22	78
Elangata WUAS	18	82
Loodokilani	16	84
Sajiloni	18	84
Township	25	75
Ilmunkush	17	83
Nkama	16	84
Poka	16	84

The study further revealed that poor access to clean water has been a cause for conflicts where women have been adversely affected. For example, collecting water 15 km away can cause conflict at home because women spend so much of their time fetching water, hence their other domestic obligations cannot be fulfilled. This is likely to cause disagreements with their spouses and result to domestic violence.

A key informant from African Medical Research Foundation (AMREF) a Non-Governmental organization informed the researcher that in the Maasai community, water is meant for livestock. Since the Maasai women do not own livestock, they cannot control or manage the water. Furthermore, there is only one watering point at the borehole where livestock will drink water first until satisfied while women are waiting. They will then fetch water for domestic use from the same point. This key informant narrated an incident where a woman was assaulted by a man (not her husband) in public at a watering point because she went to fetch water when the cattle were still drinking. The case was, however, reported to the police and the man was charged with a criminal offence. In order to prevent such disputes, the NGOs sponsoring boreholes are now creating two

separate water points, one for men and the other for women, to address the needs of women

The situation here observed the findings by Were and Roy (2008) that gender analysis is very necessary in water projects as this will enable the needs of women to be considered such as the valuable time wasted at the wells , conflicts and the hygiene factor.

4.8 Role of Women In Different Uses Of Water Resources

The study found that women collect water daily for domestic use, raising small livestock and growing food. Over 65% of the respondents from all the locations opined that providing water for domestic use was the main role for every woman. The location with the highest percentage indicating domestic use was Elangata WUAS with 76% while the lowest was Namanga and Bissil each with 65% as shown in Table 4.18 here below.

Table 4.18: Role of women in regard to use of water

Location	% Response on uses of water		
	Domestic use	Vegetable farming	Watering livestock
Bissil	70	15	15
Namanga	65	20	15
Elangata WUAS	76	12	12
Loodokilani	73	15	12
Sajiloni	70	15	15
Township	65	20	15
Ilmunkush	75	12	13
Nkama	70	15	10
Poka	70	15	10

Most of those women found out carrying farming activities were from Township and Namanga at 20% each. These were in areas where the residents have piped water thus enabling them to have enough water to drink and vegetables farming. The highest percentage of those watering livestock was 15% while the lowest in this category was 10%.

The study established that contrary to popular belief that the Maasai are purely nomads, women are left behind to carry out farming for their sustenance. For those women who water livestock, it was observed that after their husbands go to graze the cattle, the young calves, sheep and goats are left home for women to look after. These findings agree with Boserup (1989) that in most societies, food and water gathering was originally a female responsibility and that it is “woman- the- gatherer” who is the source of sustainable food supply and not “man – the- hunter”. This is also in agreement with the findings of Coates (1999) and GWA, (2005), that women have the primary responsibility for the management of the household water supply, sanitation, food production and preparation and care of domestic animals.

4.8.1: Involvement of Women in Managing Water Resources

Regarding the extent women were included in managing water resources, Loodokilani and Sajiloni had the highest respondents at 96% indicating that women were included in managing water resources to a little extent. In the moderate extent category, Namanga, Township and Bissil had the highest respondents at 32%, 30% and 30% respectively. In six out of the nine locations, no respondent stated that women were involved to a great extent as shown in Table 4. 19

Table 4.19: Involvement of Women in Managing Water Resources

Location	% Response on the extent of involvement of women		
	Great	Moderate	Little
Bissil	15	30	55
Namanga	15	32	53
Elangata WUAS	0	16	84
Loodokilani	0	14	96
Sajiloni	0	14	96
Township	17	30	53
Ilmunkush	0	15	85
Nkama	0	15	85
Poka	12	10	78

This study also established from focus group discussions and key informant interviews that in most areas, women were still underrated and thus not deemed fit to be in leadership position. Nonetheless, due to the constitutional requirement for equality, men were left with no option but to allow women to be part of the managing team. However, it was found that even after women are included in water management, they still fear speaking in the presence of men because of culture. One respondent was quoted saying “*if a man has said something, no woman can say otherwise as this may cause a lot of conflict and can make her to be beaten*”.

Denton (2002) found that despite the crucial role of women in natural resources and environmental management, discriminatory structures and attitudes still result in deeply entrenched patterns of gender inequality in this area. This in effect has led to low participation of women in water resources management.

It was also revealed that men still disregarded the women’s input leaving them as spectators in key decision-making processes. It was only in urban centers such as Namanga, where women were listened to and their views respected. In fact, the successful water projects in Namanga water supply had three women out of ten members, a clear indication that if women were given a chance to lead, they are capable of becoming better managers. This agrees with the findings of Sijbesma and Van (1989) which established that projects designed and run with full participation of women are more sustainable and effective than those that do not. Women’s participation was also strongly associated with the effectiveness of water and sanitation projects.

Women are the main collectors and users of water in Kajiado County. They have to decide where to collect water from, how to draw, transport and store it, how much water to draw, how many sources of water to exploit and for what purposes. However, this study established that few women are involved in the management of water resource. This is in agreement with Marion (2011) that the position and concerns of women have also been invisible in environment debates and programmes. Kajiado is a male dominated society and its institutions are still male dominated. Although the important role of

women in water resources management has been widely recognized, they are still poorly represented in the decision-making structures in the County.

4.9 Factors Hindering Women from Participating in Water Resources Management

On establishing the factors hindering women from participating in Water Resources Management, the study established that there were three major factors. The respondents cited lack of education, culture and poor access to water. The percentage responses are indicated in table 4.20

Table 4.20: Factors Hindering Women from Participation in Water Resources Management

Location	% Response on various factors		
	Lack of Education	Culture	Poor Access to water
Bissil	28	35	37
Namanga	29	34	38
Elangata WUAS	35	30	35
Loodokilani	33	33	34
Sajiloni	36	33	31
Township	29	35	36
Ilmunkush	36	33	31
Nkama	35	32	33
Poka	33	32	32

The three factors were rated almost equally and there was no significant difference. The respondents stated that according to the Maasai culture, women were supposed to be married at a tender age. As such fathers found no need to educate the girl child. The study established that the culture and lack of education were closely related. Men are also revered in the community because they own all the resources, are the family heads and decision makers. Women are not allowed to speak in public as per the culture and are not expected to argue with or oppose men. Women, therefore, fear in demanding their rightful position in elective posts to avoid discrimination both at home and in public. Even among people residing in urban centers such as Kajiado town in Township location and Namanga town where people were more informed and educated, the culture factor

was still an issue to them. A key informant revealed that during elections, people cannot elect a woman.

Women in Kajiado County still face lot of barriers to participate in community development activities including water projects. These barriers include refusal by husbands to attend meetings that addressed issue of safe water, discrimination, subordinate roles, weak leadership, lack of mobilization, lack of time and failure to see the benefits of their participation. Their participation in water projects is largely centered on the provision of their labour for unskilled work, often adding to their already heavy workload. This agrees with the IFAD (2007) in a study done in Ghana which found that although policymakers had undertaken efforts to encourage women's participation in Water resources management, women did not participate effectively due to lack of confidence in standing up for their rights. Illiteracy and social norms prevented women from taking up any public role. Even where women have been given a responsibility in the water committees, they have often been token representatives with a passive role without effective participation.

Respondents also stated that men had deliberately excluded women from their meetings claiming that women could not keep secrets. Other respondents stated that women as per the Maasai culture could not address men in public. A few participants lamented that early marriages were to blame as they prevented young and energetic women from taking leadership positions in their locations. Property ownership was another factor that was raised as it played a big role in leadership in this community; therefore since women are not allowed to own property, they are subsequently kept away from various leadership positions.

This agrees with Singh (2006) that water policy interventions which guaranteed women's participation through a reservation quota of 33% in the Panchayat Raj' Institutions (RRI)bodies did not succeed due to the culture which dictated women's role in traditional decision making structures. In effect, women's membership was tokenistic and in meetings they were represented by their male relations, mostly husbands and sons. These findings further agree with GWA (2005) that women are assumed to represent

marginalized group and they experience gross inequalities of formal power and authority in the public sphere. As such, they are denied equal access to and control over resources. In the water sector, for instance, the inequalities are perceived in terms of access to water resources and benefits from water development projects as well as exercise of decision making powers with respect to the management of these resources.

Lack of time and engagement in domestic chores were also cited as other factors which prevented women from participating in water resources management. Another problem raised was lack of interest among women due to gender bias by men in meetings which led them to withdrawal. This agrees with the findings by Were and Roy (2003) that women rarely participated in water resources management, as they were responsible for preparing meals when meetings took place in their homes. Women also felt marginalized and that their views were not considered seriously, thus they opted to form their own separate groups with their own committees.

4.10 Access to Information on Water Resources Management

Regarding whether women had access to information/documents from public authorities regarding management of water resources, between 67% and 88% in all the locations stated that women had no access. The highest percentage was in Poka at 88% while the lowest was in township at 67%. Those who said that women had access to information were in the minority with the highest percentage being in Township(33%), Namanga(32%), and Bissli(30%) as shown in table 4.21.

This is a clear indication that although the law and policies stipulated that women should have access to information, this has not been realized on the ground. Consequently, women participation in water resource management has been adversely affected. Access to information is also influenced by the population's education level, occupation, income levels and general infrastructure. This explains why the percentage of those who said that they had access to information was high in Namanga, Bisslil and Township locations. Many respondents however said that even if there were procedures to ensure that people had access to information from public authorities they were poorly managed and utilized, as the concerned parties did not publicize the issues to ensure that they reached the

women. Furthermore, women were at home, were not educated and had no money to buy the materials containing the information.

Table 4.21: Access to Information on Water Resources Management

Location	% Response on access to information	
	Yes	No
Bissil	30	70
Namanga	32	68
Elangata WUAS	15	85
Loodokilani	15	85
Sajiloni	16	84
Township	33	67
Ilmunkush	17	83
Nkama	15	85
Poka	18	88

The study findings agree with those of Mjoli and Nozibele(1998) who noted that policy positions should aim to break the marginalized position of women in the management of water supply and sanitation. She notes that water and sanitation projects are more sustainable when women have ongoing responsibilities for their operations and maintenance. They are more committed since they are adversely affected by project failure and that access to information was vital in enhancing women’s capacity to participate in water resources management.

4.11 Land Ownership By Women

Failure by women to own land was also stated by the respondents to be another factor which adversely affected women’s participation in water resources management. As indicated in table 4.22, over 75 % of the respondents in all the locations stated that women in did not own land. Three locations, Loodokilani, Sajiloni and Nkama had the highest percentage at 86% stating that women did not own land. The lowest percentage in

this category was from Township and Namanga locations at 75% each. Only a small percentage of respondents stated that women owned land, most of them being from Township (25%), Namanga (25%). And Bissil (20%).

Table 4.22: Land Ownership by Women

Location	% Response on whether women own land	
	Yes	No
Bissil	20	80
Namanga	25	75
Elangata WUAS	15	85
Loodokilani	14	86
Sajiloni	14	86
Township	25	75
Ilmunkush	15	85
Nkama	14	86
Poka	15	85

During focus group discussions, it was established that most people still respected and adhered to cultural beliefs that women should not own land, because they were seen as outsiders or people who would be married and join other families. However, the educated women especially those in urban centers had bought their own land. A scrutiny about situations in a widow and widower case revealed that in areas where the culture was practiced heavily, after the husband's death, the land was transferred to the sons. Nevertheless, some respondents said that sometimes, though rare, in a situation of a husband's death land was transferred to the widow. Most women who owned land were single and were only found in urban centers.

Land ownership is a precondition for access to water in many countries. Women's failure to own land has negatively affected their access to water and hence their participation in water resources management. The participants said that this made them to be underrated, while others added that they were unable to make a meaningful contribution as their

opinions were ignored by men who claimed that their decisions were baseless and could not be effected by someone who did not own anything.

4.12 Women's Roles In Decision-Making Processes

According to the findings in the Table 4.23, the respondents who said that women make decisions were in the minority with the highest percentage being from Township (35%), Namanga(30%) and Bissli(25%). Ilmunkush, Sajiloni and Ilmunkush locations had the lowest percentage (15%) of respondents who said that women make decisions.

Table 4.23: Women’s role in decision making

Location	% Response on whether women make decisions	
	Yes	No
Bissil	25	75
Namanga	30	70
Elangata WUAS	15	85
Loodokilani	16	84
Sajiloni	15	85
Township	35	65
Ilmunkush	15	85
Nkama	16	84
Poka	18	82

The study established that men were held high in the Maasai community as they owned land hence giving them power to make all the decisions. Elangata WUAS, Sajiloni and Ilmunkush locations had had the highest at 85% of respondents saying that women did not make decisions. In other localities, women only made suggestions and left men to make final decisions concerning water management. Due to the high rate of illiteracy, women had no expertise that could enable them to participate in major decision-making. In addition, some men disregarded women when it came to decision-making. The respondents stated that cultural roles and beliefs were still alive and were a major obstacle to women’s empowerment.

4.13 Increase in the Number of Women in Water Resources Management

Namanga(85%), Township(85%) and Bissil(80%) locations had the highest number of respondents who stated that in the recent past, there has been a tremendous increase in the number of women in the management of water resources as both the constitution and non-governmental organizations continue to empower them. All the locations had more than 65% of their respondents stating that there has been an increase in the number of women in water resources management.

Table 4.24: Respondents' Response on the increase of number of Women in Water Resources Management

Percentage Response On Increase In Water Resources Management		
Location	Increase	No increase
Bissil	80	20
Namanga	85	15
Elangata WUAS	70	30
Loodokilani	70	30
Sajiloni	65	35
Township	85	15
Ilmunkush	65	35
Nkama	65	35
Poka	70	30

Most of those who said that the number of women in the management of water resource had not increased ranged between 15% and 35% as show in table 4.24. This small percentage which stated that it had not noted any increase in the number of women represents interior areas where the residents were not aware of the constitutional provisions and where men are still adamant that they cannot be led by women. In these areas women are contented with the subordinate position which the society has placed them in.

A significant number of the boreholes in Kajiado are sponsored by Non-Governmental Organizations such as African Medical Research Foundation (AMREF), German Agro Action (GAA) and World Vision. A key informant from AMREF told us that during elections for borehole management committees, men cannot elect a woman because water

is for livestock and women do not own livestock. Further, a woman cannot be elected treasurer because money belongs to the men. However, the sponsors always insist on one third of the positions being reserved for women hence women have found their way into the committees. The informant blamed the Maasai culture and said that even after the women have been put in the committees, they rarely attended the meetings and when they attend, they sit at the back and do not participate. According to this informant, women are not supposed to speak in public or even oppose men.

The reasons why women have increase in water resources management was attributed to an increase in women's education, income levels, and awareness of women's rights among others. The participants said that constitutional requirement and government policies had empowered women, while others stated that currently women are more educated and enlightened unlike before. It was noted that NGOs and the government have increased funding to ensure women are involved in every level of management. Another factor that was highlighted was that more women as compared to men are naturally responsible and sociable thus the reason why community was turning to women for management.

The breakdown of cultural barriers has made men more accommodative hence, allowing women to contest in elective post without fear. The factors which were said to have enhanced women's participation in water resources management in the recent past were laws and government policies ensuring that one third of the positions are reserved for women. Education and breakdown of cultural barriers were also cited as major factors. This agrees with the findings of Mjoli and Nozibele, 1998 that gender balanced policies in water resources management should acknowledge the intention of improving the lives of women and enhancing their participation. Policy and Legal positions should aim to break the marginalized position of women in management of water resources.

4.14 Effect of Laws and Policies in Water Resources Management

The respondents gave divergent views on the effect of Laws and Policies in Water Resources Management. The respondents who did not know were the majority at

Elangata WUAS (85%), Loodokilani and Nkama at 84%. The lowest was percentage of those who said they did not know were from Namanga (60%) and Township (62%).

Table 4.25: Opinions on Government policies and laws on water resources management

Location	% Response whether the Laws and Policies support women's participation in water resource management		
	Yes	No	Do not know
Bissil	15	20	65
Namanga	18	22	60
Elangata WUAS	0	15	85
Loodokilani	0	16	84
Sajiloni	0	16	83
Township	20	18	62
Ilmunkush	8	10	82
Nkama	0	16	84
Poka	11	10	79

In Nkama, Sajiloni, Loodokilani and Elangata WUAS locations none of the respondents indicated that the Laws and Policies supported women's participation in water resource management. It was noted that these same locations had over 80% respondents stating that they did not know. In these locations illiteracy levels were very high and as a result women did not understand the laws and policies. On the other hand, those who said yes from Township, Namanga and Bissil locations indicated that the legal development enacted in the constitutional provisions to empower women will positively transform their role in water resources management as its effect would be to give them power which men would never have given them due to the Maasai culture. They, nevertheless, felt that this constitutional development has not been effected fully and it will take a long time to have significant impact on women in this set up because of the strong culture.

The participants agreed that the one third constitutional demand that women must be represented will make women’s suggestions to be taken more seriously and women will initiate their own projects. A sizeable number of them were of the opinion that there will be more women participating in water resources management, therefore creating more employment opportunities for women. Other respondents feared that women will remain marginalized as most of their contribution is underrated and that cultural barriers will be hard to break. However, they were optimistic that women opinion will be taken more seriously and eventually bring a paradigm shift in their participation in water resources management. All the participants unanimously agreed that the benefits of women participating in water resources management would reduce embezzlement of funds. It was discussed that women’s inclusion will increase attendance in meetings and reduce wrangles and disagreements, since women rarely engage in fight to settle disputes.

4.15 Strategies and Approaches to Enhance Women's Participation in Water Resources Management

The respondents were asked to suggest ways of improving women's participation in water resources management. Nkama location had the highest percentage stating education and capacity building at 36%. Poka (34%) had the highest of those who said that positions should be reserved for women. Other respondents suggested that access to clean water should be improved with Elangata WUAS having the highest responses at 22%. Township location had the highest at 23%, who suggested that women should be empowered financially and this will enhance their participation in water resources management.

Table 4.26: Proposed strategies and approaches to enhance women’s participation in water resources management

Location	% Response on strategies and approaches			
	Education and capacity building	Reserve positions for women	Improve access to clean water	Empower women financially
Bissil	30	30	20	20
Namanga	29	32	18	21
Elangata WUAS	30	30	22	18

Loodokilani	34	31	17	18
Sajiloni	35	34	18	13
Township	30	33	15	23
Ilmunkush	33	34	15	18
Nkama	36	35	14	15
Poka	35	36	14	15

Other suggestions included initiation of more community based water resource management programs targeting women, gender equality promotion and affirmative action as measures for enhancing women's participation. The majority of those who were of the opinion of capacity building said that given a level playing ground, women had all the necessary skills to compete with men and boost their inclusion in water resource management. Focus group discussions and key informant interviews recommended government's intervention through policies to address lack of education, poor access to water and the retrogressive culture. Seminars and training targeting both men and women to create public awareness were also recommended as measures to encourage equality in decision-making within the community.

The strategies and approaches used to enhance women's participation in water resources management should also include women being appointed in senior positions in the water management committees. During focus group discussions and key informant interviews, respondents indicated that the trend in the sampled locations has been that women are usually appointed as treasurers and secretaries. No woman has ever been appointed as chairman.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter presents the conclusions and recommendations of the study based on the objectives.

5.2 Conclusions of the study

5.2.1 Role of women in water resources management

- a) The study established that in Kajiado, women have the primary responsibility of household water supply, sanitation and health.
- b) They are expected to provide water for domestic use, for growing food and for rearing small livestock.
- c) However, women are rarely included in the management of water resources. They do not effectively participate in water resources management and especially in decision making processes.

5.2.3 Challenges faced by women while participating in water resources management

5.2.3.1 Gender Inequality

- a) Findings of this study confirmed that the Masaai exhibit gender inequality in the form of patriarchy .The pattern has influenced customary marriages, inheritance of property and control over resources.
- b) Masaai women experience subordinate social status and they are responsible for most of the household chores with no decision making power within the household and the community.

- c) Management and control over resources such as livestock and income from all sources is vested in the man. Women are thus regarded as dependants and therefore required to follow decisions and directions by the men and this makes them socially vulnerable. Subsequently, women have unequal access to information, water resources and are underrepresented in decision making. This denies them opportunities to negotiate upon their concerns at policy level thus their practical needs are rarely addressed.

5.2.3.2 Culture

In Kajiado County, life revolves around livestock and water projects are meant to provide water for livestock.

- a) The study established that at the boreholes there is a single water point, where water is drawn from a single trough. Since men own the livestock, they control the water point and ensure that the cattle are given priority to drink water. Women have to wait and are only allowed to draw water for domestic use, from the same trough, after the cattle are satisfied.
- b) It was confirmed that this has caused conflicts between men and women and it also compromises on the water quality with adverse effects on health of the entire livelihoods. The culture also dictates that women are subordinate to men; they are not expected to speak in public or in the presence of men let alone to opposing or arguing with them. This was found to be one reason why women have not been effectively participating in water resources management.

5.2.3.3 Lack of education

- a) The study revealed that the incidence of gender discrimination in education is still high. In many occasions, eight out of 10 girls had failed at times to go to school and had to assist their mothers in collecting water.
- b) It was also revealed that young women are usually circumcised at the tender age of 10 to 15 years and married off to elderly men. Girls are usually considered as assets by the Maasai community who after being married off earn them dowry in terms of livestock. This denies the girl child an opportunity to acquire education and technical skills.

- c) Most women therefore lack formal education, especially in rural areas where there is low level of awareness on the importance of education by the community. As a result, women lack capacity to participate in water resources management.

5.2.3.4 Access to water sources

- a) The study found that women walked for between 10 and 15 km to the water sources. If women have to spend so much time collecting water, their other obligations are not fulfilled and this created conflicts with the husbands at home.
- b) Carrying water for long distance and sometimes up a steep terrain also led to health risks such as frequent headaches and backaches, malformed spine, obstructed birth and high mother and baby mortality rates.
- c) To avoid these problems, women confirmed that they are sometimes tempted to collect water from contaminated sources because it is easy to access it; this water sometimes caused health hazards.
- d) The responsibility of collecting water consumes a lot of energy and time from the women.

5.2.3.5 Efficacy of the existing legal, institutional and policy framework in enhancing the participation of women in water resources management in Kajiado County.

- a) From the findings, it was found that the number of women participating in the water management has increased because of the provisions in the policies and the laws that the women be given a minimum of one third representation in all the appointive and elective positions. This has ensured that women are included in water management committees. Without this provision, it was confirmed that the Masaai men would never elect a woman to a leadership or management position.
- b) Unfortunately, the study established that even where women have been appointed into the water committees, they are just but numbers and they do not participate effectively.

- c) However, Laws, institutions and policies on water management in Kajiado County are not adequate to support and enhance women's participation in management of water resources. Other measures such as improving education level, increasing capacity building, and public awareness would enhance the participation of women in water resources management. Laws and policies improving land ownership rights for women are also important and need to be fully implemented.

5.3 Recommendations

In order to enhance women's participation in water resources management, the several recommendations are suggested.

5.3.1 Capacity building

- a) Targeting women for training and capacity building is critical to the sustainability of water and sanitation initiatives particularly in technical and managerial roles. This will empower them to participate in the decision-making process, making their needs to be addressed at the policy level. The empowerment of women as water managers should also be done at the grassroots level.
- b) Training programmes targeting women are essential so that the women are equipped with skills to manage water programmes and projects. There is, therefore, need for a special approach to girls education especially in technical aspects. As revealed in the literature review, in South Africa, Uganda and Lesotho, women at the local level have been trained to locate water sources in the village, to decide on the location of facilities and to repair pumps.
- c) Affirmative action policies such as 'women in water' awards and a bursary for young women to take up careers in the water sector in South Africa have proved to be successful means of empowering women.

5.3.2 Education and Public awareness

- a) Although basic education is now free and compulsory, this government policy has not been fully implemented in Kajiado County.

- b) There is need to sensitize parents to take advantage of the government policy and allow their children especially girls to attend school.
- c) The government should also ensure strict enforcement of the free and compulsory education policy for all the children in Kajiado County.
- d) Most projects are run by agencies and within communities where little gender sensitization has taken place and where awareness and understanding of gender inequality is low.
- e) It is important to sensitize all the stakeholders, men and women on the importance of involving women throughout the whole project process from planning, implementation, monitoring and evaluation.
- f) Extensive and intensive social mobilization should precede project implementation so as to create a sense of awareness and ownership, and to bring about attitudinal change. Successful mobilization requires a minimum of six months prior to implementation. This is the only way to ensure that the policies advocating for women's participation in decision making are understood and accepted at the community level.

5.3.3 Improved access to water

- a) Access to safe drinking water is a basic human right and essential for achieving gender equality sustainable development and poverty alleviation.
- b) Providing physically accessible clean water is essential for enabling women and girls to devote more time to the pursuit of education, income generation and even the construction and management of water and sanitation facilities.
- c) The government together with other development partners should provide water at reasonable distance, quality and quantity. This should be done not only to address health and sanitation issues, but also to reduce the everyday drudgery or women by providing them with more time for self-improvement and participation in water resources management. It is also a key to the attainment of the millennium development goals and Vision 2030.

5.3.4 Multi-purpose water projects

- a) Not addressing the multiple uses of water has been found to be one of the causes of the low participation of women in the water resources management. Water in Kajiado is essentially meant for livestock and only one water point is provided. The projects should be designed in consultation with both men and women so that different water points are made to provide water for domestic use, for livestock and even irrigation. This would ensure that women do not spend so much time collecting water and that the water is not contaminated. The projects should also be designed to provide water for agriculture to enable women grow food crops for feeding their families and also for income generation. This will lead to the empowerment of women and enhance their capacity to participate in water resources management. The study revealed that, at present water project are basically aimed at providing water for livestock.

5.3.5 Mainstreaming gender in water management.

- a) Mainstreaming gender is a process of assessing implications for women and men in any planned action, including legislation, policies, or programmes, in any area and at all levels. It is a strategy to include women's concerns and experiences in design, implementation, monitoring and evaluation of policies and programs in all social economic levels so that women and men benefit equally and inequality is gradually reduced. The ultimate goal of gender mainstreaming is to achieve gender equity- equal access to participation in the decision making process, resources and benefits, ultimately leading to women's empowerment.
- b) There is need to institutionalize gender mainstreaming through policy, legislation and financing.
- c) The government should provide steady and secure resources to support the necessary structures and programs.
- d) Among the key tools of gender mainstreaming is gender analysis, which seeks to determine the differences between men and women in terms of rights, responsibilities, access to resources, power and the like in a given situation.
- e) It is therefore important to carry out a gender analysis in Kajiado County to gain a clear understanding of the actual situation of both men and women.

- f) A thorough knowledge of social realities and gender power dynamics prior to projects design, planning and implementation is required for all the water projects.

5.3.6 Gender-desegregated data

- a) More gender-disaggregated data and focused research is required to assess the extent to which women have been incorporated in water related plans, programs and projects in Kajiado County. This is important in order to design solid gender-responsive interventions to monitor implementation and to evaluate the impact of policy and legal interventions on different groups of people particularly women.
- b) Documenting and sharing of existing knowledge is also important for drawing lessons on what works and what does not work in certain situations and in specific areas such as Kajiado County.
- c) Although there are several water programmes and projects that have focused on gender issues and women's involvement in these projects, the experiences have not been adequately documented. This is particularly true regarding the process of involving women in the said project, the related achievements and the challenges faced. In some areas, reference to women's participation in a project is limited to the number of women beneficiaries and number of women trained.
- d) More needs to be done to document clearly the roles that women have played, the experiences and the lessons learned. This information will guide future undertakings.

5.3.7 Strict enforcement of the Constitution

- a) Stored wealth in the form of livestock and land is in the hands of men. Many women do not control cash income and therefore cannot make financial decisions. Women tend to be left out of decision making processes mainly due to their social status as dictated by the Masaai culture. Men are the heads of households, while woman are considered as assets to the men.

- b) The community needs to be sensitized on the constitutional provisions outlawing all forms of discrimination based on sex such as in the ownership of land and in education.
- c) Both men and women need to be informed on the one third gender legal requirement which provides that no single gender should have more than two thirds representation in any elective and appointive positions. This will eventually cause a change of attitude.

5.3.8 Gender policy in Water Resources Management

- a) It is imperative to have a gender policy in Water Resources Management to guide the government, non-governmental and donor organizations involved in water provision and management in addressing gender issues in their water programs, through their policies, procedures and personnel.
- b) The gender analysis of these implementing agencies should include their organizational structure and culture; their policy formulating mechanisms; the organizations objectives and strategies; the personnel policies and human resource development; the provision of gender training; and the role of change agents in the organization.

5.3.9 Amendment of the Water Act of 2002

- a) The Act vests ownership of all water resources on the state and no one can use water without a permit. Proof of land ownership through a title deed is a requirement for granting of the license. This has far reaching implications for the management of water resources and provisions of water services to the rural poor who have limited access to state based systems. The permit privatizes water rights to a small section of the community, essentially property owners who are able to acquire the permits. It marginalizes the poor rural communities especially the women who are unable to meet the requirements for obtaining a permit, principally land ownership. Women cannot, therefore, effectively utilize water resources, in economically productive activities such as irrigation and commercial livestock rearing.

- b) The rural communities practicing communal land tenure system are also unlikely to be able to operate within the Water Act of 2002. The majority of the residents in Kajiado County fall in this category. The people without access to reliable water services often represent the poorest and most marginalized of Kenyan people. These are the people least likely to take advantage of, and benefit from the legal framework in the water Act of 2002 for the provision of water services. They are also the ones likely to suffer most from inadequate management of water resources.

5.4 Suggestions for Further Research

- a) There is need for further research on actual data on numbers of women in water management in the County.
- b) Studies on improving the education and income levels for women should be conducted as they will have an influence in enhancing women's participation in water resources management.
- c) The sample size for future studies being done on the same should be increased as this study was constrained by the time and the financial parameters.
- d) The same study should be done in other areas where water scarcity is a big challenge affecting the livelihoods of the communities.
- e) More research should be conducted involving the male gender so that the views of men concerning water resources management are also collected. These views would be important in guiding policy formulation and implementation.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE TO WOMEN GROUP MEMBERS

UNIVERSITY OF NAIROBI

CENTRE FOR ADVANCED STUDIES IN ENVIRONMENTAL LAW AND POLICY

A SURVEY ON WOMEN'S PARTICIPATION IN THE MANAGEMENT OF WATER
RESOURCES IN KAJIADO COUNTY

QUESTIONNAIRE TO WOMEN GROUP MEMBERS

INTRODUCTION TO THE RESPONDENTS

My name is **Teresia Gathagu** , a student from the **University of Nairobi**. As a requirement for my Masters degree in Environmental Policy, I am conducting a study titled, **Enhancing women's participation in water resources management: challenges and policy options**. The survey is voluntary and you can choose not to take part. The information that you give will be confidential and will be used for academic purposes only; it will not include any specific names. Could you please spare 15-20 minutes for the interview and kindly answer the following questions.

01	Date of interview	
02	Name of the Division	
03	Name of the location	
04	Questionnaire number	

PART A: DEMOGRAPHIC INFORMATION

1	Name of Respondent (optional)	
2	Tel./Mobile Phone No.	
3	Postal Address	
4	Division and location	
5	Age (Tick as appropriate)	1] 20-< 29yrs 2] 30-<39yrs 3] 40-<49yrs 4] 50-<59yrs 6] 60 yrs and above
6	Sex	1] Male 2] Female
7	Marital Status	1) Married 2) Single 3) Widow
8	Occupation	1) Self Employed 2) Employed 3) House Wife 4) Farmer
9	Level of Education	1] None 2] Primary school 3] Secondary school 4] College 5] University
10	How long have you stayed in this	1] 1- 3 years

	region/location	2] 3- 6 years 3] 6- 9 years 4] 9- 12years 5] 12 years and above
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PART B: ROLE OF WOMEN IN THE MANAGEMENT OF WATER RESOURCES

1. What is the role of women in regard to use of water resource in this location?

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2. To what extent have women been included in managing water resources?
Explain.....

.....
.....
.....
.....

3 (a) Are there problems that hinder women’s participation in water resources management?

Yes No

If yes, please explain your answer.

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.....
.....
.....

3. (b) How do you think the problems in 3(a) would be addressed ?

.....
.....
.....
.....

4. Are there cultural factors that hinder women from effectively participating in water resources management?

Yes No

If yes, what are these cultural reasons or factors? **Please explain**

.....
.....
.....
.....
.....

5. Are there procedures to ensure that women have access to information/documents from public authorities regarding management of water resources?

Yes No

If yes, how do you rate them?

Excellent Good Fair Poor Do not know

6. (a) How would you describe the situation in your location, as regards access to clean water?

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.....

(b) how has this situation affected women and girls in the location ?

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7. What are the sources of water in this location?

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8. What is the quality of the water from the various sources?

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9. What is the distance between the water source and the homestead?

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10. How much water do you fetch per day?

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11. How do you transport the water from the source to your homestead?

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12. How do you store the water?

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13. Are there conflicts between men and women regarding access to water?

[] Yes [] No

If yes, please explain

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14. Do women own land in this location? [] yes [] No

If no, how has this affected the role of women in water resources management?

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15 Explain the different roles for men and women in decision making processes in this location

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16 How have these roles affected women's participation in water resources management?

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17. In the recent past, has there been an increase in the number of women in water resources management? [] Yes [] No

If yes, what do you think are the reasons?

Please explain

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.....

18. The constitution now provides that women should own land and should be given at least a 1/3 of all the appointive and elective positions. Will this legal development in your view enhance the participation of women in water resources management?

Yes No

Please explain

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.....
.....

19. What strategies and approaches do you think may be used to enhance women's participation in water resources management?

PART C: WOMEN EMPOWERMENT IN WATER RESOURCES MANAGEMENT

How do you rate the following statements?

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
1. The government supports women's participation in the management of water resources?				

2. Laws, Institutions and Policies on water management in Kenya are adequate to support and enhance the role of women in management of these resources				
3. The society, men and women are committed to sustaining and enhancing women's participation in the management of water resources				
4. Competence and knowledge exist among women in management of water resources				
5. All people especially women are provided with required skills and capacity building sessions to empower them in managing water resources				
6. Improved access to water will take away a big burden from women and this will enhance their participation in management of water resources				

Thank you for accepting to take part in this survey, I appreciate your concern and understanding.

END OF SURVEY

Please append your signature in the space provided to clarify you voluntarily agreed to take part in the survey

Signature.....

Date...../...../20.....

Name of interviewer.....

Signature.....

Date...../...../20...

Enumerator's important field observations (please write at the back of this page)

APPENDIX II: KEY INFORMANT QUESTIONS

UNIVERSITY OF NAIROBI

CENTRE FOR ADVANCED STUDIES IN ENVIRONMENTAL LAW AND POLICY

A SURVEY ON WOMEN'S PARTICIPATION IN MANAGEMENT OF WATER RESOURCES

KEY INFORMANT QUESTIONS

INTRODUCTION TO THE RESPONDENTS

My name is **Teresia Gathagu** , a student from the **University of Nairobi**. As a requirement for my Masters degree in Environmental Policy, I am conducting a study titled, **Enhancing women's participation in water resources management: challenges and policy options**. The survey is voluntary and you can choose not to take part. The information that you give will be confidential and will be used for academic purposes only; it will not include any specific names. Could you spare 15-20 minutes for the interview and Kindly answer the following questions.

- 1) How do you rate women's participation in the management of water resources in this area?
- 2) What are the advantages and benefits of women participating in water resources management?
- 3) To what extent would you say women have been empowered to play a role and to participate in water resources management?
- 4) Are there culturally agreed women's roles in the management of water resources in this area?
- 5) What do you think are the reasons for not effectively involving women in the management of water resources?
- 6) What do you think should be done to enhance participation of women in water resources management?

7) What would you say has been the impact of Government policies and legislation regarding empowerment of women and enhancing their participation in water resources management?

8) The constitution now provides for at least a 1/3 of women's representation and also women's right to own land. What impact do you think this constitutional requirement will have regarding women's participation in water resources management?

APPENDIX III: FOCUS GROUP DISCUSSION GUIDE

UNIVERSITY OF NAIROBI

CENTRE FOR ADVANCED STUDIES IN ENVIRONMENTAL LAW AND POLICY

A SURVEY ON WOMEN'S PARTICIPATION IN MANAGEMENT OF WATER
RESOURCES

FOCUS GROUP DISCUSSION GUIDE

INTRODUCTION TO THE RESPONDENTS

My name is **Teresia Gathagu** , a student from the **University of Nairobi**. As a requirement for my Masters degree in Environmental Policy, I am conducting a study titled, **Enhancing women's participation in water resources management: challenges and policy options**. The survey is voluntary and you can choose not to take part. The information that you give will be confidential and will be used for academic purposes only; it will not include any specific names. Please could you spare 15-20 minutes for the interview and Kindly answer the following questions.

- 1) How would you describe the water situation in Kajiado County generally and in your area in particular?
- 2) To what extent would you say that the government has provided this basic service?
- 3) What are the main sources of water in this area?
- 4) What percentage of the population is served with piped water?
- 5) How many kilometers do people without piped water at their homes, walk to the communal water points to fetch water?
- 6) Who are involved in fetching water?

- 7) Who are involved in the management of water resources?

- 8) What role do women play in the management of water resources?

- 9) To what extent have women been empowered to participate in the management of water resources?
- 10) What would be the advantages and benefits of involving women in management and conservation of water resources?
- 11) What challenges hinder women from effectively participating in the management and conservation of water resources?
- 12) Are there culturally agreed roles of women in the community relating to the management of water resources?
- 13) Would you say there is adequate access to information on the existing laws, institutions and policies regarding the role of women in water resources management?
- 14) What would you say has been the impact of government policies and legislation in this area regarding empowerment of women to enhance their participation in water resources management?
- 15) The Constitution now provides for at least a 1/3 of women's representation and also women's right to own land. What impact do you think this constitutional requirement will have in this area regarding women's participation in water resources management?

APPENDIX IV: PHOTOS ON DEFERENT WOMEN EFFORTS ON ENHANCING WOMEN’S PARTICIPATION IN WATER RESOURCES MANAGEMENT IN KAJIADO COUNTY

Photo 5.1 : Maasai Women constructing a tank



Photo 5.2 : Training Maasai Women and Building Rainwater-Harvesting Tanks in the Maasai Regions of Ngong and Kajiado Kenya.



Photo 5.3 : Using stored rainwater to water tree seedlings



Photo 5.4: Girls, fetching water and helping. At the age of nine, it is not uncommon for them to marry.



Photo 5.6. a young girl carrying water on her head.

Photo 5.4: Community animals drinking water from a river

