THE ROLE OF WOMEN IN WATER MANAGEMENT IN MANGA SUB- COUNTY OF NYAMIRA COUNTY, KENYA

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DECLARATION

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

Signed ……..Date …….

Meshack Omingo Omweri

N69/78455/2015

This project paper has been submitted for examination with my approval as the University Supervisor**.**

Signed ……..Date …….

Professor Simiyu Wandibba

DEDICATION

This work is dedicated to my brothers and sisters for their struggle to ensure that I attain a meaningful education and encouraging me to work hard amidst the difficult financial circumstances of the family.

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I would like to express my heartfelt gratitude to the numerous individuals and the Institute of Anthropology, Gender and African Studies towards this study. Special appreciation goes to my supervisor, Professor Simiyu Wandibba, for his unwavering support and concern. I would also like thank the residents of Manga Sub-County for their contribution towards this project.

ABSTRACT

Water is an essential commodity for socio-economic development and its management is key in the realization of its sustainability. Men and women have different roles in water management and the study sought to establish the role of women in water management and the challenges they face. The study was conducted in Manga Sub County, Nyamira County.

The study used a qualitative approach to explore the roles and challenges women face in water management. The relevance of the approach was to yield subjective experiences of women in water management. Guided by implicit gender roles theory, qualitative data was obtained through semi-structured interviews, key informant interviews and focus group discussions. Analysis was conducted through thematic and content analysis.

The findings show that women are majorly involved in supplying households with water. Resultantly, and by the gender role, they are vested with the role of storage, managing water use, and water treatment. Women are also involved in community water management initiative including communal work on water resource management. However, in the statutory water committees, women's participation is not felt at this decision-making level.

The study concludes that lack of women's participation in water management is a function of gender roles and traditional gender inequalities that serve to justify and promote discrimination along the gender dimension. The study therefore recommends that water policies recognize the potential in women's participation in water management and enhance their capacity in managing water not only at domestic level but also at statutory level.

ABBREVIATIONS AND ACRONYMS

AMCOW	African Ministerial Council of Water
CCPR	Covenant on Civil and Political Rights
DC	District of Columbia
FGD	Focused Group Discussions
GoK	Government of Kenya
GWA	Gender and Water Alliance
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICRAF	Individual and Community Rights Advocacy Forum
IDRC	International Development Research Centre
LVSWSB	Lake Victoria South Water Services Board
MOWR	Management Proclamation and Regulation
PANAFCON	Pan-African Implementation and Partnership Conference on Water
SDGs	Sustainable Development Goals
TAC	Technical Advisory Committee
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WRMA	Water Resources Management Authority

CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 Introduction

The importance of involving women in the management of water at household and community level has been overwhelmingly recognized by the international community. This is manifested in the 1977 United Nations Water Conference at Mar del Plata, the 1981-1990 International Drinking Water and Sanitation Decade, the 1992 International Conference on Water and the Environment in Dublin and the 2002 Johannesburg Plan for Implementation (UN Women, 2011). The resolution establishing the International Decade for Action, Water for Life (2005-2015), also calls for women's participation and involvement in water-related development efforts. The Convention on the Elimination of All Forms of Discrimination against Women which was ratified by 187 countries, emphasizes the right of women to enjoy adequate living conditions, particularly in relation to water supply, housing and sanitation (CEDAW, 2009:59). Furthermore, the improvement of the situation of women in rural areas, adopted in November 2011, urged Member States to promote access to safe and clean drinking water and sanitation to improve the health of rural women and children (World Bank, 2006).

Studies from 45 developing countries show that women and children bear the primary responsibility for water collection in 76% of households. In 12 per cent of the households children carry the main responsibility for collecting water, with girls under 15 years of age twice as likely to carry this responsibility as boys under the same age (UNICEF, 2010:29). Women and girls spend long hours fetching water, both for domestic and productive use, but this unpaid work in managing water scarcity is often not adequately recognized and addressed in policies and programmes. The hardship of women and girls associated with the primary careers of the family as growers and producers of food and as unpaid water

collectors add to their drudgery and deprive them of educational and employment opportunities to break the intergenerational transfer of poverty and disempowerment (Haward & Bartram, 2003).

In Africa, women play a major role in collecting, managing and maintaining communal water supply, as well as regulating and controlling its social use and maintenance (GWA, 2006). Men have traditionally been responsible for making decisions and have dominated the process which affects the management of the projects as a result of socio-cultural factors such as land ownership which is patriarchy inherited or controlled by men. According to GWA (2003) water rights are mostly related to land tenure and are culturally transferred together in a patriarchal manner. In most communities, women may be working on the land, but they often have no right to participate in decision-making regarding its use. This suggests that for water and sanitation projects to provide services efficiently, women and men must be empowered to participate actively in their management. In addition, policies on gender participation must be adequately translated into practice, as there exist very little evidence of an explicit attempt at increasing or improving participation of women in water management initiatives in Manga Sub-County of Kenya.

Locally, the constitution of Kenya recognizes water accessibility as a human right in which every person is entitled to have access to sufficient and affordable water and sanitation of acceptable quality for personal and domestic use (GoK, 2010:42). The Water Act of 2002, has decentralized water management responsibilities to county governments with the aim of promoting local governance and public participation in water projects. Indeed, the decentralization strategy facilitates greater social ownership of water resources and hence more sustainable environmental outcomes (GoK, 2002:32).

1.2 Statement of the Problem

Being one of the most important key elements influencing public health, well-being, the preservation of ecosystems and driving the economic development of a country, water is a natural, yet limited resource that is 'under pressure' (UN, 2012). Thus, planning, management and preservation of water is essential. Fundamental to water resource planning and management is an understanding of the availability of water and a notion of how much of it will be needed, in what quantity, for how long and for what purposes.

In addition to the above fundamentals, there is also a need to understand the actors in water use. It is understood that women are the closest actors in water. Women play a major role in water and land conservation, rainwater harvesting, watershed management, and rehabilitation of springs in order to raise productivity and produce cash crops (Al Naber and Shatanawi, 2004). As a result, those ties between women and water are numerous yet the women face considerable inequality, such as limited access to important positions of decision-making in water related-issues.

The National Water Master Plan Study of 1998, Water Act (2002) and the National Water Policy (2009) share a common principle of interest, that is, a strong emphasis on public participation as well as the recognition of gender issues in water management. However, these policies are presented as gender neutral. The policies fail to specifically state the special attention that needs to be paid to gender and its relation to the water policies. The water policies ought to define women's roles, needs, demands and emphasize women's invaluable knowledge in order to improve female participation in water management programmes. This implies developing explicit gender-based objectives, targets and measures within the general policies.

However, women's participation in decision-making and as water resource managers is rare. Women are not included in water management. Because of the traditional attitudes and beliefs of society, household water provision is still a female responsibility in most African societies, especially in the rural areas (Rathgeber, 2005). Like those of other African countries, Kenyan women and those from Manga sub-county, in particular, are not significant decision-makers in almost all water management issues. It is not because they are less efficient, but because they have limited access to necessary inputs, as a result of various cultural norms. In fact, even today many people assume that men can lead while women cannot, based on the argument that women cannot make full time open ended commitment to their careers. This assumption has its own impact on the contribution of women in water resource management.

According to some studies done by international donor organizations, there is an increased number of women on water boards, water associations and other community-based organizations in some countries (WMF, 2017). However, women's views are not influential during the water committees due to the patriarchal society. Women usually walk for long distances in search of water thus exposing them to constraints (GoK, 2008). Despite the Kenya Government's efforts to ensure all the stakeholders are included at all management levels, there still exists a gap between the written water interventions and the practical interventions that are meant to enhance women participation in water resource management in Manga division. The study therefore sought to answer the following research questions:

i. What role do women play in water management in Manga Sub-County of Nyamira County?
ii. What are the challenges facing women in water management participation in that Sub-County?

1.3 Objectives of the Study

1.3.1 General Objective

To assess the role of women in water management in Manga Sub-County of Nyamira County.

1.3.2 Specific Objectives

i. To describe the role of women in water management in Manga Sub-Count of Nyamira County.
ii. To establish the challenges facing women in water management participation in that Sub-County.

1.4 Assumptions of the Study

i. Women play a great role in the provision, management and safeguarding water resource in Manga Sub-County of Nyamira County.
ii. Women face a number of challenges when they participate in water management.

1.5 Justification of the Study

In Kenya, and specifically in Manga Sub County of Nyamira, women hardly participate in water management and sometimes they are not represented at all. This is due to cultural influence and the dominant patriarchy system in water management. This study, therefore, sought to generate empirical data that can be used to alleviate the situation by those engaged in programmes aimed at empowering women in water management.

Moreover, the study has provided baseline data for other researchers who are interested in studying the role of women in water management in detail. Finally, the County government of of Nyamira can use these findings to sensitize the community on the importance of involving women in all areas of water management.

1.6 Scope and Limitations of the Study

The main aim of this study was to assess the role of women in water management in Manga-Sub-County of Nyamira County. Specifically, the study set to assess women's role, and the socioeconomic challenges hindering women's participation in water management in that Sub-County. Implicit gender role theory was used to predict gender inequalities. The research was limited to Rigoma Ward in Manga Sub-County. Given that this study utilized a qualitative approach, the findings cannot be generalized to other areas but it has provided useful information on the role of women in water management.

1.7 Definition of Terms

Water Management: The process which promotes the coordinated development and management of water in order to maximize the resultant economic and social welfare**.**

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter begins with a review of the literature relevant to the topic and ends with a discussion of the theory that guided the study. In keeping with the objectives of the study, the literature is reviewed using the following topics: Water resource management, the role of women in water management, and the challenges women face in water resource management.

2.2 Water Management

According to the Technical Advisory Committee (TAC) of the Global Water Partnership (1996), water is a resource under pressure (Burton, 1996). As noted, the world's fresh water resources are under increasing pressure because of the growth in population, increased economic activity and social inequity which have led to increased competition for and conflicts over the limited fresh water resource.

Eroğlu (2007) defines water management as the wholeness that collects all the conditions and methods related to the determination and planning of need concerned with water resources, rational water use, detailed observation, and efficient protection under its framework. He further states that it is to guarantee the supply of water in a required place and at a required time with sufficient and quality, and to protect people and their activities from the damaging effects of water resource development projects of different content and scope.

When water projects are undertaken, those involved are generally male staff and male local authorities. Local institutions in which women are present, such as women's organizations, church groups and schools are seldom involved in contacts between project staff and village authorities. Channels used for information and communication, such as public meetings and written materials are also male-oriented. Women cannot attend public meetings as easily as

men and if they can, they have to stay on the edge and keep silent (Department of Water, 1999). They also have less access than men to written information because of the lower proportion of literate women and lower knowledge of official languages. As a result, the knowledge and expertise of women, which differs from that of men because of its different tasks, cannot play a role and its value is not acknowledged (Situma, 2000). Projects which assume that information and communication with women can take place through men do not recognize that in many cultures each group has its own channels and topics of communication and hence information and consultation of the women will not take place (Van Wijk, 1995). Women are often the ones most motivated to establish and maintain an improved water supply, yet do not necessarily participate in decisions and management.

2.3 Role of Women in Water Management

Women are the primary users of water in domestic consumption, subsistence agriculture, health and sanitation. Women in many cases also take the primary role in educating children, in child and family health including sanitation and in caring for the sick. Understanding and empowering women will help to plan water interventions and policies which are based on the knowledge of how and why people make the choices they do in water use in order to meet their needs (Sever, 2005).

In addition, advancing gender equality may be one of the best ways of saving the environment and countering the dangers of overcrowding and other adversities associated with population pressure. The voice of women is critically important for the world's future and not just for women's future (Esere, 2001). However, men are often in control of budgets and planning and this may result in women's uses of water being given less importance than those of men. So, as Sever (2005) observes, if women do not participate in management, they lose rights and privileges that they had before the project or programme began and may therefore, in fact, end up being more dependent on men.

Aladuwake and Momsen (2010) argue that the gendered nature of water use and management is a problem for effective and sustainable water resource management. Women's experience and knowledge should, therefore, be recognized and factored into development projects with the aim of managing and conserving water resources. Sustainable development requires women's full and equal participation in resource management and hence the issue of women's empowerment is of central importance (Aladuwake & Momsen, 2010). In many parts of the world, the daily search for pure drinking water is becoming an ever more time consuming task, leaving less time for household work and child care. In some cases, gender roles have become more interchangeable, as women have become empowered (Momsen, 2004).

Water may also disappear through the irreversible degradation which takes place when wetlands, flood plains and coastal ecosystems are destroyed (GWA, 2006). Deforestation, in particular in catchment areas, and the damaging of rivers are another danger, while the impact of climate change on water systems, through droughts and flooding, as well as extreme weather conditions are becoming more and more visible. And whenever clean water is scarce, the livelihoods of the poor and women are often the first to suffer the consequences. Therefore, the participation of women in the development of water and sanitation schemes is a determinant factor for its sustainability (MOWR, 2007); among others, it gives the right to full involvement of women in the planning, implementation, decision-making and training as well as empowering them to play a leading role in self-reliance initiatives.

According to IDRC (2001), to achieve women's participation, people must understand and accept women's potential contributions to the effectiveness of improved water supply and sanitation and make women aware of new information about how they can improve the quality of their lives and those of their families. Based on the concept of genuine community

involvement, there must be a dialogue with community members, so that needs and choices can be identified and women's status and roles fully understood and appreciated.

Wilder (2007) indicates that women can be empowered through effective social change. According to her, increased awareness and education among girls and women about human rights and personal rights, as well as emphasis on education, life skills and leadership development, is an important mechanism.

According to Faaye (2007), education is an important mechanism to empower women. She observes that equality in education represents, in general, a package of policies which includes fair access and reasonable treatment including opportunities for underrepresented groups like women not only to enter, but also to progress well in educational systems. In relation to this, Tong (2000) argues that if society is to achieve sexual equality and gender justice, it must provide women with the same political rights and economic opportunities as well as the same education that men enjoy.

Murutse and Giorgis (2006:73) suggest that women can be empowered by "easing the difficulty that arises as the result of working longer hours than men. In this case, Rathgeber (2006:50) states that "water is a good starting point for discussing how women can be freed from traditional roles to participate in decision-making processes. Roman (2005) argues that by delivering a training programme that dwells on the subject of gender awareness and sensitization, the participation of women in leadership can be realized. On the other hand, studies such as those of Boyle *et al.* (2009) and Ali PA and Gavino (2008) indicate a change in women's roles from tradition to participating in leadership which is linked to economic development and modernization. Furthermore, since it is believed that economic development leads to modernization with its diverse effects, its contributions to the improvement of women's living is undeniable. The ability of women to participate in management becomes strengthened as a result. There is also a need for equal opportunity legislation, affirmative

action principles, women's movement and feminist thought affecting both scientific and popular interest in women leaders (Chin, 2008).

Women play a central role in the provision, management and safeguarding of water resources. Naturally, women fulfill important roles as managers of water resources. They have the knowledge, experience and skills of fetching, handling and use of water and sanitation resources (Rathgeber, 1996). However, no matter the level of responsibility, they have no opportunity to participate fully in the development process of this important resource for a variety of reasons. Thus, it becomes quite a necessity to reverse this situation and bring women in the foreground and involve them in the consultation process and facilitate their full participation in water management.

Women and men have different roles and responsibilities in managing water and this results in different needs, priorities, and concerns (Ray, 2007). For instance, women are universally responsible for managing domestic water supplies with extensive health and social benefits accruing to the whole household. In addition, women manage water resources for productive uses alongside men (Ray, 2007). These productive uses vary from community to community. For example, women may be responsible for subsistence agricultural production while men may be primarily engaged in commercial agricultural production creating difference in their respective needs for water resource management programmes (Mohan, 2001). This division of labour is overly simplistic as it obscures the many interconnections between the varied uses and users of water and leads to distortions in planning.

Furthermore, the division of water use into household and productive uses has brought about the assumption that women's strategic interest in water is concentrated primarily in having access to convenient, reliable and safe sources close to the homestead for their domestic responsibilities. In the majority of cases, this assumption is certainly invalid because women take part in various activities such as agricultural production which has direct economic

benefits for themselves, their families as well as their respective communities as well (Rathgeber, 1996). Therefore, gender differences and inequalities should be taken into account if water project interventions are to be effective in serving the needs of women as well as men and to lend weight to the long-term goal of promoting gender equality.

Another facet of women's participation in watershed management is associated with the operation and maintenance of water sources. Women have shown initiative in taking charge of maintaining communal water facilities such as boreholes. For instance, women on many occasions impose restrictions that ensure water is safe for consumption (Shah *et al*., 2009). Women have also acquired invaluable knowledge, experience and skills of fetching, handling and use of water resources through their daily roles and responsibilities within the household.

Meinzen and Zwarteveen (2008) acknowledge that women are knowledgeable on the availability, quality, reliability, and purity of water sources across the contexts of household and community. This suggests the need for women's involvement in water management for an improved water supply. Furthermore, Madulu (2005) suggests that it is important to involve women in assessing and solving their water problems since they are the ones who interact with their own environments and carry out activities that have an impact on the environment. In this context, women know what is in their best interest and therefore for any water project to be accepted and successful, it has to welcome women aboard.

Lastly, women are known for organizing, lobbying, and protesting in order to effect change in water management so as to improve water management and development for their benefit and that of their families. This motivation and self-organization is vital as women are increasingly becoming active agents of change and the dynamic promoters of social transformations that can alter the life of all members in society (Sen, 2009). However, the manner in which decisions and choices on water resources are handled can have great

implications for women who use the technologies to get water and are the end users of water resources in the households (Rydhagen, 2002).

2.4 Challenges Women Face in Participating in Water Management

In practical terms, it is not that easy to attribute the low involvement of women in water management. According to Rathgeber (2007), "cultural patterns have an impact". Claude (2003) states that women in Africa, especially those in rural areas, suffer by comparison with men and with women in most other parts of the world as a result of cultural barriers interacting with low levels of economic development. Howland (2002) found that women who participated in any meeting could not speak before men participants.

The Universal Declaration of Human Rights (UN,1948) adopted by the UN proclaims that "all human beings are born free and equal in dignity and rights" yet women's freedom, dignity and equality are persistently compromised by law, custom and religious traditions in ways that men's are not, particularly in developing countries. Mernissi (2000) argues that religion was developed to camouflage male dominance and package it as sacred, eternal and transcendent divine law. The reinforcement of patriarchy is the trait that Christian fundamentalism most clearly shares with the other forms of religious beliefs that have also been called "fundamentalist" (Howland, 2006). Buddhism, Christianity, Hinduism, Islam and Judaism all seek to control women and the expression of sexuality.

According to Howland (2003), fundamentalists argue that men and women are by divine design "essentially" different and they aim to preserve the separation between public and private, male and female, spheres of action and influence. However, the human rights committee, the monitoring body of the International Covenant on Civil and Political Rights (ICCPR) encourages parents to ensure their children receives a religious and moral education.

According to Rathgeber (2006), African women's capacity to have inputs into water resource use and management is hampered by their lack of exposure to science and technology. To make informed choices and decisions, potential beneficiaries of water systems should have basic knowledge and understanding of the technologies involved. Women are disadvantaged because of their lack of confidence about technological matters and because of negative male attitudes towards female technical knowledge. Overall, UNESCO (2006) indicates that in developing countries, especially in Africa, there are still historical, cultural and economic factors that have been hindering women's chances of access to and benefits from formal education especially at the tertiary level.

However, women's indigenous technical knowledge can and should form a solid basis for technology development activities, especially in the water resource management sector (Howard, 2003). In some parts of the world such as China, there are more women in scientific fields. However, there is still a similar disparity in their representation in policy making and in the agricultural department (ICRAF, 1999).

2.5 Theoretical Framework

2.5.1 Implicit Gender Role Theories

This study was guided by the implicit gender role theories, specifically entity theory that is attributed to the work of Alice Eagly's social role theoretical perspective. The theories have roots in psychological discourse and focus on cognition, consciousness (group), behaviour and on the foundation of gender division of labour and gender roles (Eagly, 1987). They address social and gender roles and constitute beliefs about the malleability or fixedness of the roles. According to the theories, identity in terms of masculine and feminine characteristics provide tentative explanation on how individuals on one side of gender identity identify strongly and are adamant to change the gender role or are loosely attached to gender identity and can accommodate gender role changes.

Within the implicit gender role theories, entity theory postulates that a given trait or role is fixed and cannot change. In gender roles, those who conform to fixed theory believe that certain duties and expectation to undertake these duties are inherently wired to gender. Thus, the role is believed to be gender-specific and the domain of the individuals with that gender identity. On the other hand, the incremental theory of gender roles states that roles are not fixed. Rather, they can change and are linked to certain contexts, circumstances and actions.

The premises and domains of entity and incremental theories have impact on cognition and motivation. They infuse certain in-group characteristics and consciousness that might influence behaviour and perception (Dweck and Leggett, 1988). The theories' domains reinforce certain traditional beliefs and justify inequalities based on fixedness or malleability. Individuals adopt the roles based on the in-group characteristics and performing the roles affirms belongingness to the group or gender identity.

2.5.2 Relevance of the Theory to the Study

Entity and incremental theories, as amplified within the implicit gender role theories, helped to explain the in-group characteristics and how women assume these roles, either within the entity or incremental domains. The theories helped to explain why men might be reluctant to take up some roles in water management and why women traditionally perform certain roles and may not change- group consciousness of entity domain. Additionally, they helped to explain why women may not take up other roles in water management, since the roles are fixed and unchanging.

The entity theory also helped to explain why women have upheld the gender roles in water management and why the roles are perpetuated without changing- how the status quo in water management has been maintained.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter describes the methodology that was used in this study. It describes the research site, research design, study population and unit of analysis, data collection methods as well as data processing and analysis. The section ends with a discussion of the ethical issues that were taken into consideration.

3.2 Research Site

This study was carried out in Manga Sub County of Nyamira County (Fig 3.1). Manga sub-county borders West Mogirango Constituency, Borabu Constituency and Kisii County.

3.2.1 Relief and Climate

Nyamira county is located within latitudes of 0^0 30 “and 0^0 45`` South and between longitudes 34^0 45 “and 35^0 00” East. The County is hilly and is dominated by two topographic zones which lie between 1,250 m and 2,100 m above the sea level. Wetlands, swamps and valley bottoms characterize the lower zone while the upper zone is characterized by hills. Due to the high alititude and the red volcanic soil in the county, the area provides favourable climatic conditions for the growth of tea which is a major source of income in the county. The county is supplied with water by protected and unprotected springs as well as boreholes and seven permanent rivers which include Sondu, Chirichiro, Eaka, Kijauri, Mogonga, Kemera, Charachini, Bisembe, Gucha, Ramacha and Egesagane (County Government of Nyamira, 2016).

The area experiences an annual minimum mean temperature of 10.2^0C and a maximum mean temperature of 29.6^0C. Rainfall ranges from 1200 mm to 2100 mm annually. The long and

short seasons occur from December to June and July to November, respectively. There is no distinct dry spell, conditions that are favourable for both agriculture and livestock production.

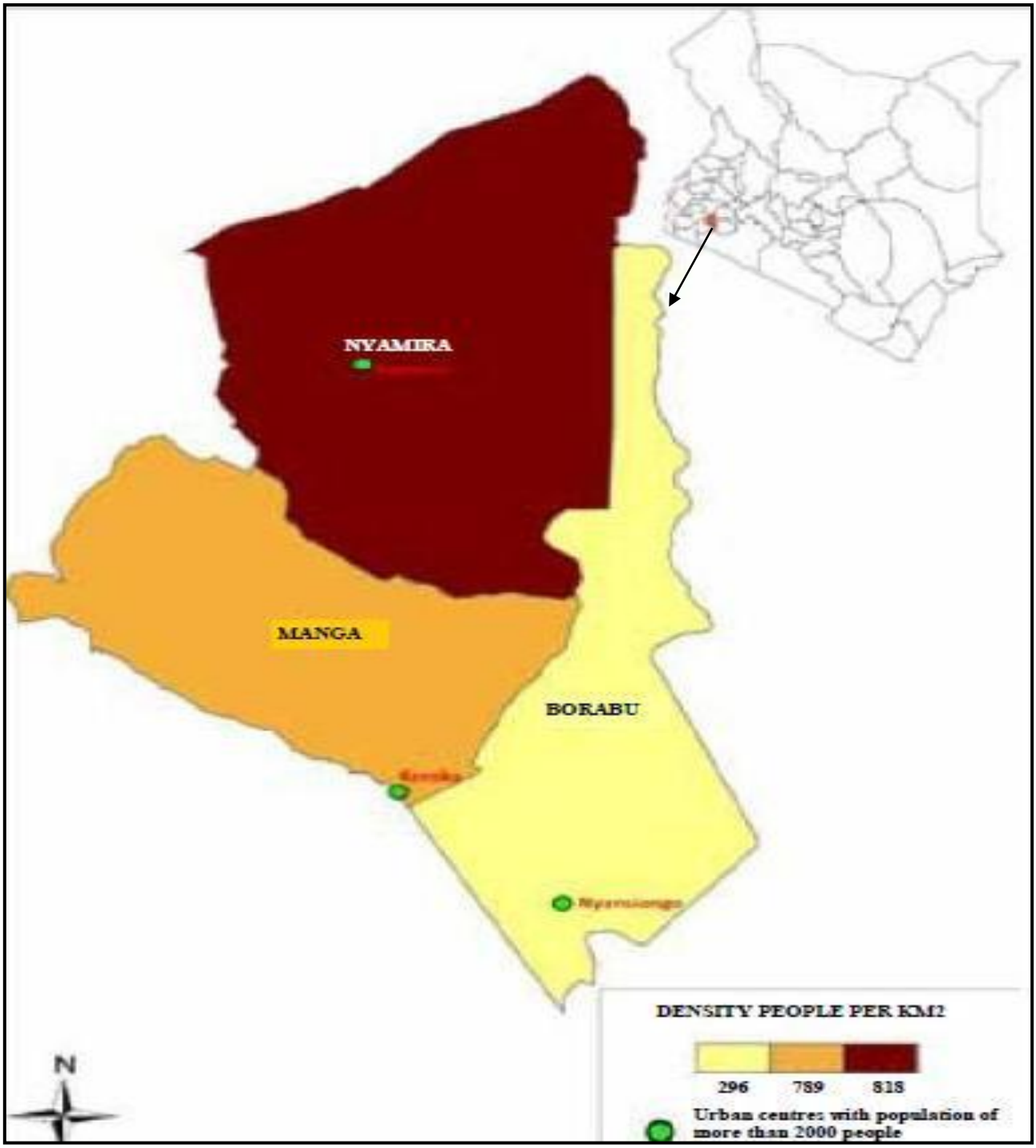

Figure 3.1: A map of Nyamira County

3.2.2 Gusii Culture

Families in the community tend to be very large and socially cohesive with families living close to one another and sharing activities such as cooking and faming. Men among the Gusii community are allowed to marry more than one wife and are considered to be the authority in their families almost as “kings” to their women. According to their culture, women do not inherit or own land, cattle or any other productive resources. This makes them completely dependent on men for survival (Kenyacolors, 2014).

3.3 Study Design

This study employed a cross-sectional descriptive design. It used semi-structured interviews, focus group discussions and key informant interviews to collect data. The qualitative data were recorded for transcription and the transcripts subjected to thematic analysis to extract emerging themes. The findings are presented in form of themes and direct quotes that support the themes.

3.4 Study Population and Unit of Analysis

The study population consisted of women aged 18 years and above living in Manga, Sub-County. The unit of analysis was the individual woman aged 18 years.

3.5 Sample Size and Sampling Procedure

Sampling involves selecting the individual units to measure from a larger population (Gall *et al.*, 2003). This study employed purposive sampling to select women respondents from Rigoma Ward in the Sub-County. The study purposively targeted 50 female respondents for semi-structured interviews.

3.6 Data Collection Methods

3.6.1 Semi-structured Interviews

A semi-structured questionnaire (Appendix 2) was administered to respondents. The interviews focused on the role of women in water management and the challenges they face in water and water management.

3.6.2 Focus Group Discussions

Focus group discussions were conducted with women outside the study sample. There were three women focus group discussions with discussants selected purposively from Rigoma Ward. An FGD guide (Appendix 3) was used to guide the discussions.

3.6.3 Key Informant Interviews

These were conducted with six professionals and local residents who had firsthand knowledge on water management. The informants included the chairman of the local Lake Victoria South Water Services Board (LVSWSB) Nyamira Branch, two field officers, one male and one female, the County Minister in charge of water and two community leaders involved in traditional management practices. The key informants provided useful insights into women's participation in water management and also gave recommendations. A key informant interview guide (Appendix 4) was used to collect the data.

3.6.4 Secondary Sources

The development of the proposal relied on data from various sources including journal articles, government and institutional publications, books, and other secondary sources. These sources were continually used to enrich the study.

3.7 Data Processing and Analysis

Data from the semi-structured interviews, FGDs, and key informant interviews were transcribed verbatim. Codes were developed from the transcripts and emerging themes identified in the thematic analysis. Codes and themes were identified by reading the content of the transcripts. Content analysis provided a systematic and objective means of describing a phenomenon into detail to enhance understanding of the data. Direct quotes and illustrating key themes emerging from the transcripts, were extracted and used in this final manuscript.

3.8 Ethical Considerations

Prior to fieldwork and data collection, the study sought approval was sought from the National Commission for Science, Technology and Innovation (NACOSTI). The researcher issued the respondents with informed consent form (Appendix 1) which they read. Verbal consent was also sought. In the informed consent, the researcher explained to the respondents the purpose of the study and the procedure that would be followed. The researcher assured the respondents that the information they provide would be treated with utmost confidentiality and that it would not be used for purposes other than the ones stated. Their identity would not be revealed since no names were used and any identifier would be removed and pseudonyms used. However, the study did not encounter direct or indirect identifiers.

Participation in the study was voluntary and the respondents were informed of their right to withdraw at any stage and that the withdrawal would not disfavour them whatsoever. However, the researcher asked for their cooperation and all the respondents completed the interviews.

CHAPTER FOUR

ROLE OF WOMEN IN WATER MANAGEMENT

4.1 Introduction

This chapter presents the study findings and describes the thematic areas identified during data analysis. The chapter has two main sections. The first one presents the socio-demographic characteristics of the respondents, while the second one presents findings in tandem with the research objectives.

4.2 Socio-Demographic Characteristics of Respondents

4.2.1 Age

The findings in Table 4.1 below show that 32% of the respondents were aged 31-40 years, while those aged 51 years and above only accounted for 22%.

The findings indicate that there is a link between age and involvement in water management. Although the respondents, irrespective of age, participated in household water management including water treatment and storage, older women were more likely to be involved in water management including being representatives in water committees. However, not many women are involved in water management committees. According to one respondent:

> The level of management depends on how mature one is. Girls use water in the houses but are advised. After they are old enough, they can make the decision alone (Respondent 18, 58 years old).

> Mostly, you realize that we can understand women's role in water management by looking at the household level. This is where they [women] make key decisions regarding how water is used, disposal and treatment. Few are involved at structural level, and these ones are likely to be older and considered senior (Community leader)

Age, as a variable thereof was an important socio-demographic characteristic as it formed an analytical category in relation to water management.

Table 4.1: Sociodemographic characteristics of the respondents

Age Bracket	Frequency	Percentage
18-30	13	26
31-40	16	32
41-50	10	20
51+	11	22
Total	**50**	**100**

4.2.2 Marital Status

The marital status of the respondents is shown in Figure 4.1 below. The findings indicate that 70% of the respondents were married while only 2, accounting for 4% were widowed. Single respondents and separated/divorced ones accounted for 14% and 12%, respectively.

The findings in fig. 4.1 suggest a connection between marital status and water management among women. Essentially, participation in water management, especially at the community and structural levels, was subject to a desired marital status. Specifically, married women were more eligible to participate in community water management than single ones. Spinsterhood, separation and divorce were, was in fact, cited as some of the barriers within the social structure and relations that limit women's participation in water management. There is general discrimination and stigma against unmarried, single, or divorced women. Consider the citations below.

> A woman's ability to lead and make decisions starts with her home [marital home]. People do not trust you [woman] if you are single or divorced and cannot thus give you a position to do with water. Married women are thought to be more responsible (Respondent 12, 51 years old).

> It is hard [like me] to be included in a [water] committee. Even if I am chosen, they [men] will look down upon me. I even lost interest. Like, if I can't keep a

man, they doubt if I can do management. But in my house, I do everything because it is my duty (Divorced respondent 2, 34 years old)

Some studies have established that marital status is an important determinant of women's ascendance to management positions. For example, according to GWA (2003), patriarchal societies gauge a woman's ability and social position through marital status. Thus, community water management by women can be influenced by the social linkages associated with marriage. However, at household level, water management is not bound to marital status as women's domestic chores involve use of water.

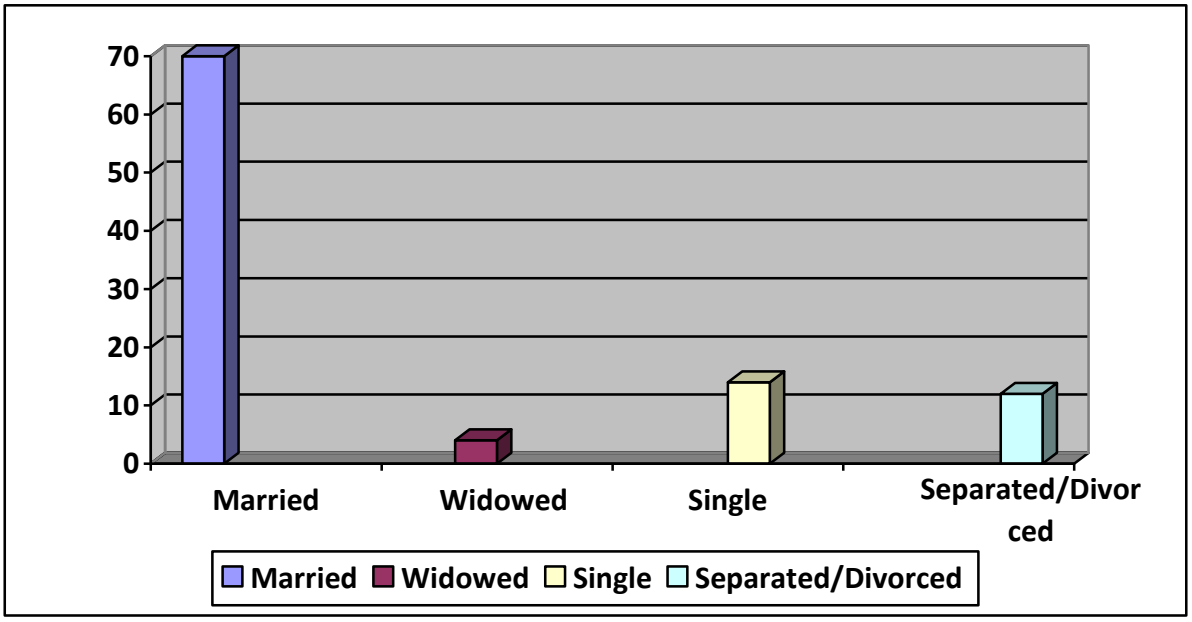

Fig. 4.1: Marital Status of the respondents

4.2.3 Level of Education

The study measured the respondents' highest level of education. The finding show that 36% of the respondents had primary education, while 34% had secondary level of education. Only 24% of the respondents had university/college education while 6% reported to have had no formal education.

In relation to this study, the level of education was found to be an important determinant of women's involvement in water management. Lack of formal education was a barrier to women's active role in water management. In community water management and management of water sources, lack of knowledge posed a significant challenge to women. In one key informant's opinion:

> When it comes to decision-making in the community, you find that women are not many in the meetings. Although this could be due to gender inequality and the common view that women stay at home, they [women] also fear because they may not have the knowledge (Field officer, 2)

Regarding this variable, some of the women were found to have no formal education at all. However, the level of education did not apply at household level since women with no formal education reported to engage in water treatment roles. Women perform certain roles in water management including storage and treatment through indigenous knowledge and do not require formal education or training.

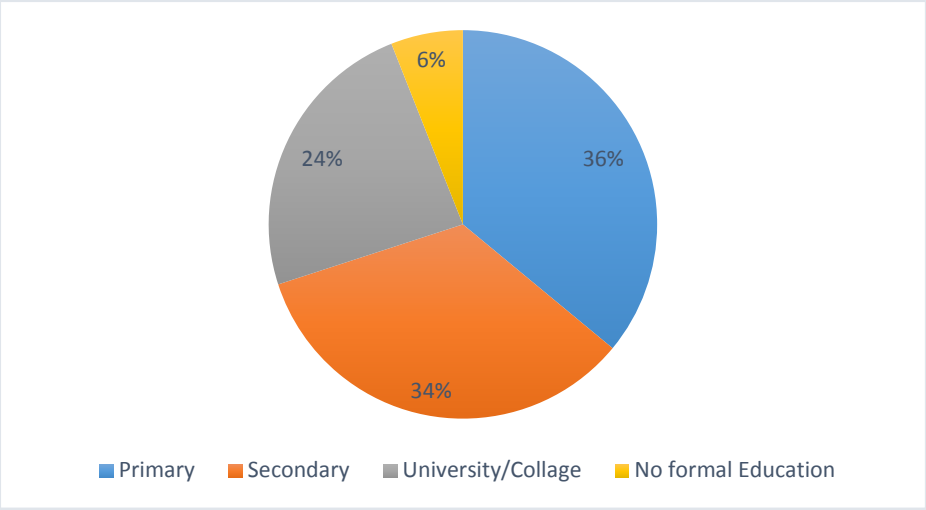

Figure 4.2: Respondents level of education

4.2.4 Occupation

The occupation categories used in this study were formal employment, business/self-employed, informal employment and not employed. The first category captures those who reported to be employed and earning a monthly salary. These accounted for 16%. The business/self-employed category captures respondents who reported to own and run businesses and kiosks. These accounted for 44%. The respondents who reported to work temporarily and whose payment is daily (wage) were classified under informal employment. This category accounted for 34%. There were also respondents who reported not to engage in any income generating activity and were grouped under not employed category. These accounted for 26% of the respondents (Table 4.2)

Table 4.2: Respondents' Occupation

	Frequency	Percentage
Formal employment	8	16
Business/self employed	22	44
Informal employment	17	34
Not employed	13	26
Total	**50**	**100**

4.3 Role of Women in Water Management

The role of women in water management was identified and grouped into two broad thematic areas: domestic water management and community/resources water management.Domestic water management encompassed decision-making and responsibility regarding use of water, storage, and treatment. On the other hand, community water management entailed participation in committees and community-level decision-making on water. The findings, however, show that women's role in water management is predominantly felt in the domestic circle as they work out their domestic chores.

In the domestic water use, findings show that women are mainly involved in replenishing water in the households from the water sources. It is a gender role vested in women and serves the basis for their involvement in domestic water management. As one respondent put it:

> First of all I would say that women are the ones mostly expected to fetch water from the river, well or elsewhere. Normally, it is women and girls who fetch water, although men and boys also assist but not all the time. For women, they know it (gender role) it is their responsibility to ensure fire and water is available for family use. So when we say managing water, maybe at home (Respondent 4, 40 years old).

In addition, another respondent had this to say:

> It is us who fetch water and bring it back (at home). That is what I would say. Then if there are other decisions especially on piped water, men come in (Respondent 5, 34 years old).

These sentiments were reinforced by one key informant.

> Gender norms dictate that there are roles that women play more than men, and vice versa. On water, women play the biggest role. There is a gap, however, because as much as women are involved in collecting water from the sources and provide households with water, their involvement in management ends there (at the household level). Rarely do we see women in committee and other water meetings to discuss issues of water supply and all that (Community leader 1).

The gender role for women to supply households with water informs their roles in water management at the household level as described in the subsequent section.

4.3.1 Domestic Management of Water Use

Study findings indicate that one of the roles for women is the domestic management of water use. Essentially, this is a continuation of the gender roles of women of fetching water and supplying the commodity to the households. In managing the use of water, findings show that women play the role of controlling water use. According to one respondent:

> When you are a woman at home, you have to take control of how water is used. When water is inadequate, you have to plan how to use the available water. It is also your responsibility to determine sometimes who will fetch water (Respondent 9, 38 years old).

This was reinforced by a key informant in the following words:

> The commonest way women participate in water management within the domestic circles is making decisions on water use. Many activities within the household require water use but the water might not be adequate throughout. Thus, women allocate like five jerry cans for bathing or something else (County minister in charge of water)

4.3.2 Domestic Wafter Storage and Quality

Findings show that another area where women are involved in water management is in storage and improvement of water quality. As part of their gender roles, it is the responsibility of women to not only supply water in the household but also secure storage. As one of the respondents put it:

> You do not use all the water available at home. Since we need water all the time, one is supposed to know how to keep water for longest time possible because as you know it is a precious commodity (Respondent 7, 27 years old).

Another respondent had this to say:

> We store water in jerry cans. At the end of the day, you will use water in the next day and during the dry sessions. It is something that happens sometimes unconsciously (Respondent 4, 39 years old).

4.3.3 Informal Initiatives

Women participate in water management through informal initiatives within the community. Findings show that these initiatives include advocacy and sensitization activities designed to increase awareness and management of natural (water) resources. Women also participate in the communal management and maintenance of water sources. In the words of the respondent:

> From time to time, there are initiatives organized by local authorities and women are called to participate. The activities can include maintenance of public water sources (Respondent 2, 36 years old).

Commenting on this, one key informant stated that:

> Women have own groups that have social activities. On a certain weekend, they might decide to clean up wells (Community leader).

4.3.4 Statutory Water Management Ccommittees

Findings show that some women are in statutory water management committees and play decision-making roles. However, there are only a few such women in the committees. According to one respondent:

> Personally I do not know much about these committees. I only know that there are more men than women there. We would like more women to be included to help make decisions that touch on their domain (water use in households) (Respondent 26, 46 years old).

The above statement were supported by one key informant in these words:

> Yes we have water committees in this area. We are now seeing more women included unlike before. We are still yet to see more since women are mostly involved in water issues (Field officer).

Representation of women in statutory water management committees is poor and does not address the gender parity requirement. Findings show that this is due to various challenges including gender norms and education.

4.4 Challenges Facing Women in Water Management

The study identified barriers that limit women's participation in water management. These barriers constitute the challenges of a social and economic nature. Traditional gender norms and relations that subjugate women, economic disadvantages and lack of knowledge and skills are some of the challenges women face in water management.

4.4.1 Gender Norms and Relations

Findings show that there is general discrimination of women embedded in the traditional gender inequalities that subjugate women. In the gender norms and relations, women are not seen first as key parties to statutory and other levels of water management. The designation of women within domestic confines is a felt barrier. As one respondent put it:

> There is an aspect of gender discrimination when it comes to the challenges. There is a way the society looks down upon women when it comes to big things that men do. Even in a big position like chairlady, men may not respect the woman (Respondent 1, 46 years old).

Another respondent had this to say:

> In the community initiative committee that I am a member, we are very few women. Here, even from a long time ago, women are not active in representation issues and this thinking comes from the view that we cannot do much and management issues are for men (Respondent 25, 58 years old).

Gender roles also weigh considerably on women's participation in water management, especially in statutory water management committees and informal initiatives. While the gender roles associated with supplying households with water put women almost by default in domestic water management, this is not felt beyond the household. There are other roles vested in women that limit their participation in management activities outside domestic circles. The findings show that women's most time is spent on domestic chores and so they may not even have adequate time to participate in community management activities. In the words of one respondent:

> Even when a woman is in a committee, she may skip and have irregular attendance because she has to do other things at home. If the meeting is set early and you have children and things to do at home, you prefer not to attend (Respondent 29, 35 years old).

This view was supported by a key informant who stated that:

> Time is one big challenge I can talk about. Sometimes time is not adequate for women given that some have really tight schedules for family or things like church and all. We invite them in some initiatives and although they really want to come, they are unable because of household duties (County Minister in charge of water in Manga-sub County).

Thus, traditional gender roles and beliefs create gender inequalities that curtail women's participation in water management, specifically, and other areas of development in general. The gender inequalities also produce economic inequalities that are biased towards women.

4.4.2 Economic Challenges

Although the financial challenge does not seem to affect women's participation in community initiatives and statutory water committees, findings show it is apparent at the household level. The challenge pertains to availability of financial resources for efficient and effective water storage. Ownership of durable and high capacity storage tanks was cited as a barrier in domestic water management. Respondent 9 who was aged 45 years old,stated that one has to fetch water if there is no piped water since not many people do not have storage facilities for up to a month.

This statement was supported by participants in a focused group discussion:

> Storing water is major and helps in the dry season when water is scarce. However, you find that most households have small jerry cans and small drums that only store water for short time (Focused group discussion).

However, some respondents reported to have sufficient storage tanks and so they can harvest water easily for future use.

> I am lucky last year I got two tanks that have helped me store large quantities of water, especially when it rains. Now I do not have to fetch water daily (Respondent 18, 45 years old).
>
> In our *chama* (merry-go-round), I got some money that I used to buy storage tanks. I also used the money to buy pipes and connect piped water at home (Respondent 21, 27 years old).

Thus, women with access to adequate financial resources can afford effective water storage. Apart from the storage challenges due to inadequate financial resources, water treatment is also affected. In the words of one respondent:

> The health officers say we can buy some chemicals for treating water if we do not want to boil. So we prefer to boil or set rain water for drinking (Respondent 4, 32 years old). `

Women thus use alternative means to treat water and ensure quality and safety of drinking water. This alleviates the economic challenge associated with water treatment.

4.4.3 Lack of Knowledge and Skills

The findings show that women lack relevant knowledge and skills for comprehensive water management. They also show that, on average, women have relatively lower levels of education. According to one respondent:

> I think most women do not get elected to water committees because people generally think that women do not have knowledge. Sometimes it is true because myself I did not go to school so I do not know how to do office work (Respondent 6, 29 years old).

> The education level for most women who live here is low. This way, they might not have the capacity to participate meaningfully in the formal management of water. Some of them shy away from management because they may not have the education (Community leader 2).

In domestic water management, however, women have indigenous knowledge regarding water treatment and storage, including boiling and cool storage.

> The treatment procedures and storage are simple and, with time, we have learned how best to handle water. Besides, we are trained by health officers on

> how to maintain hygiene and use water for health (Respondent 41, 39 years old).

However, men participate in water management although they may not have advanced levels of education. Some men have low levels of education yet they participate in water decision-making in the community.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the study findings, in relation to the study objectives. The discussion synthesizes the findings and relates them to findings in previous studies. The conclusion part provides the summary of the study and the key points regarding the role of women in water management and the challenges they face.

5.2 Discussion

5.2.1 Role of Women in Water Management

The role of women in water management is apparent in domestic use and storage of water. Findings also show that women participate in informal initiatives and statutory water management committees, albeit with demonstrated underrepresentation. Notably, the roles are confined within gender norms and gender division of labour. According to Kindiki (2015), gender roles for women mostly revolve around domestic chores and activities involving water use. This explains their participation in domestic water management and perhaps exclusion from community and statutory water committees.

There is unequal participation of women in water management. Women are excluded from management and decision-making. The study findings show that although women are instrumental in water use and supply in the household, they are excluded in the structural management of water. According to the International Water and Sanitation Centre (1997), women do not participate fully in water management despite their roles in water use.

Women's role in managing water resources and making meaningful contribution to decisions cannot be overlooked. The study shows that women are mostly in contact with water sources

as they pursue their gender roles of fetching water and using it in domestic chores. They have gained sufficient and accumulated knowledge on water use and storage. Incongruously, they are not well represented in water committees. According to Lusuva (2009), women have accumulated vast knowledge about water resources, storage methods, and quality. However, despite the knowledge and potential women have in water management, Alouka (2006) asserts that the central role of women has been overlooked. In Tanzania, Michael (2000) asserts that there is conspicuous gender imbalance in water management and women are on the receiving side.

5.1.2 Challenges Women face in Water Management

The study has identified challenges that women face in water management. These challenges are produced in the social environment and amplify issues of gender relations. The study reveals that gender power relations and imbalances, arising from traditional gender inequalities, discrimination and subordination of women are responsible for women's exclusion from active water resources management. Apparently, comprehensive water management is elusive as the study findings show clearly that women are left out in water management committees and cannot make decisions thereof. According to Gathagu (2013) and Kindiki (2015), the gender (domestic) roles that women have limit their capacity as active participants in water management.

The study findings show that lack of knowledge in water resource management is a significant barrier as community members lack evidence-based methods in managing their water resources. Aberman *et al*. (2015) assert that training in water management builds the capacity of the community members to be fully in charge of water management.

The respondents cited lack of formal knowledge as a major challenge that inhibits women from participation in water management. Women have nevertheless, acquired knowledge through exposure and contact with water resources and have indigenous knowledge on the

same. Cultural issues, however, limit their participation in the management of water. In this regard, women's disadvantages are two-fold since, as they may lack knowledge as men, they are underprivileged by the rigid cultural norms.

5.2 Conclusion

Women play a significant role in water management, especially at the domestic level. In domestic circles, women supply water to the households, plan for water use, storage and treatment. However, women are not involved equally in higher levels of water management. This is within the milieu of traditional gender inequalities which maintain and justify not only socioeconomic inequalities but also the exclusion of women in decision-making.

The challenges that women face in their participation in water management are rooted in the imbalances and inequalities created by a patriarchal social environment. The inequalities in terms of access to resources and opportunities, pose barriers even in participation in the management. Based on gender norms and inequalities, for example, affecting education, women lack the necessary skills for meaningful participation in water management. The general discrimination of women provides the basis on which the challenges women experience in water management are anchored. The socio-cultural matrix continues to produce and justify existing gender inequalities that further produce socio-economic inequities that are central to women's participation in water management.

5.3 Recommendations

1. Water policies and management need to focus on the role of women and set in place mechanisms through which women are represented and make decisions at policy and implementation levels.

2. Capacity-building programmes need to be initiated for women in order to increase their participation in water management.

3. Community-based initiatives such as revolving funds and saving schemes need to be established to empower women economically. This would mitigate the economic challenges women face in their participation in water management.

5.4 Areas for further Research

Emanating from the study findings within a rural set up, future research should focus on gender assessments in water management in an urban area and the factors influencing women participation in urban water management.

REFERENCES

Aberman, N. L., S.Ali, J. Behrman, E. Bryan, P. Davis, A. Donnelly andB. Okoba,. (2015). *ClimatecChange adaptation assets and group-based approaches: Gendered perceptions from Bangladesh, Ethiopia, Mali, and Kenya*.

Al –Naber, S. and M. Shatanawi (2003), The Role of Women in Water Management in Jordan. Presented at the International Water Symposium in Canne, France, June, 2003

Aladuwake, S. and Momsen, J. (2010). *Sustainable development and water resources management and women's empowerment: The Wanaraniya Water Project in Sri Lanka*. Available at http://dsc.doi.org.Accessed on 1st March, 2010.

Ali, P. and Gavin, B. (2008). Violence against women in Pakistan: A framework for Analysis. *J Pak Med Assoc*, 54:198–203.

Alouka, S. (2006). *Integrating Gender into the Promotion of Hygiene in Schools. In: Office of the Special Adviser on Gender Issues and Advancement of Women, Gender water and sanitation: Case studies on best practices*. New York: United Nations press.

Boserup, Ester (1970) *Women's role in economic development*. New York: St. Martin's Press.

Boyle, M., K. Georgiades, J. Cullen and Y. Racine (2009). Community influences on intimate partner violence in India: Women's education, attitudes towards mistreatment and standards of living. *Social Science and Medicine*, 69:691–697.

Burton, I. and van Aalst, M. (1999). *Come hell or high water: Integrating climate change vulnerability and adaptation into Bank Work*. Washington, D.C.:The World Bank.

Chin, J. (2008). Transforming leadership with diverse feminist voices. In *Women and Leadership: Transforming Visions and Diverse Voices*, pp.355-62. Jean Lau Chin, Bernice Lott, Joy Rice and Janice Sanchez-Hucles (Eds.). Malden, MA.: Blackwell.

Claude, E. (2003).Watershed development in India: Recent experiences and emerging issues. *Economic and Political Weekly*, 35 (45):3943-3947.

Convention on the Elimination of all Forms of Discrimination Against Women (2009). *The 7th Periodic Report of the Government of the Republic of Kenya on Implementation of the International Convention on the Elimination of all Forms of Discrimination Against Women*. Nairobi:CEDAW. Available at http://www2.ohchr.org/english/bodies/cedaw/docs/AdvanceVersions/CEDAW.C.KEN.7.pdf. Accessed on 10th November, 2017.

Dreze, J. and Srinivasan, P.V. (2007).Widowhood and poverty in rural India: Some inferences from household survey data. In *Widows in India*, pp.325-46. Martha Alter Chen (Ed.). New Delhi: Sage.

Dweck, C. S., and Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95:256–273.

Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Hillsdale, New Jersey: Lawrence Erlbaum.

Eroğlu, V. (2007). Water resources management in Turkey. *International Congress on River Basin Management*. Available at https://books.google.co.ke/books?isbn=9400711433.

Esere, M. (2001). Women empowerment and its challenges to gender counselling. *Journal of Counselling and Human Development*, 1(1): 16-31.

Faaye, C. (2007). *Moving forward in Zimbabwe: Reducing poverty and promoting growth*. Brooks, Manchester: University of Manchester Press.

Gall, M.D., J.P. Gall and W.R. Borg (2003). *Educational research: An introduction*. Boston: Pearson Education.

Gathagu, T. W. (2013). *Challenges and policy options for enhancing women's participation in water resources management in Kajiado County, Kenya*, Doctoral thesis, University of Nairobi.

Gender & Water Alliance (2003). *Gender perspectives on policies in the water*. Available at http://www.genderandwateralliance.org. Accessed on 1st January, 2003.

Gittleman, R. (2002). The African Charter on Human and Peoples' Rights: A legal analysis. *Virginia Journal of International Law* , 22(4): 667-714.

Global Water Partnership (2000). *Integrated Water Resources Management. Stockholm, Sweden. TAC Background Papers No. 4. Www.gwp.org*. Accessed on 4th April, 2012

Government of Kenya (2008).*Kajiado District Development plan (2008-2012).*Government printer, Nairobi.

Government of Kenya (2010). *The Constitution of Kenya*, 2010. Nairobi: Government Printer.

GWA (2006). *Resource guide for mainstreaming gender in water management, Version 2.1*. Available at www.genderandwater.org. Accessed on 4th March, 2006.

Hamdy, J., A. Sagardoy, R. Quagliariello and G. Trisorio-Liuzzi (2004). *Integration of gender dimension in water management in the Mediterranean region: INGEDI project. Bari: CIHEAM* pp. 97-113. Options Mideterraneennes: Serie A. Seminaires Mediterraneens. Available at http://ressources.ciheam.org/om/pdf/a62/06002407.pdf. Accessed on 12th October, 2017.

Haward, G. and Bartram, J. (2003). *Domestic water quality service level and healthy.* Geneva:World Health Organization.

Howard, G., M. Ince and M. Smith (2003). *Handbook on rapid assessment of drinking-water quality*. Geneva: WHO.

Howland, A. (2002). Participatory learning for sustainable agriculture. *World Development*, 23(8):1247-1263.

ICRAF (1999). *Annual report for 1997.* Nairobi: IGRAF.

IDRC (2001). *Women issues in water and sanitation: Attempts to address old age challenge*. IDRC Proceedings Series 236e. Available at http://www.idrc.ca/research/xplaw/pdf. Accessed on 7th May, 2017.

International Water and Sanitation Centre (1997). Gender in Water Resources Management, Water Supply and Sanitation: Roles and Realities Revisited. The Hague:IWSC

Kenyacolors. n.d. "Kisii." Available at http://www.kenyacolors.com/kisiiing.htm. Accessed on 14th December, 2017.

Kindiki, M. (2015). Gender Disparities in Water Resource Management Projects in Njoro Sub-County, Kenya. *International Journal of Social Science Studies*, 3(2): 123-129.

Lombardo, E. and Verloo, M (2009). Institutionalizing intersectionality in the European Union? *International Feminist Journal of Politic*, 11(4): 478-495.

Lusuva, E. (2009). *An Assessment of Gender Mainstreaming in Water Resources Management: A Case Study of Mkoji Sub Catchment in Usangu Plains, Tanzania*. Unpublished Dissertation, University of Zimbabwe.

Madulu, N. (2005). *Main socio-economic study for Kihansi River Catchment Management Plan*. Research Report No. IRA/CST98.1. Dar es Salaam.

Mbote, G. (2003). Engendering women's rights in the legal process: Gender considerations in constitution-making. *University of Nairobi Law Journal*, 1:1 *p. 1. 53. Ibid. 54.*

Meinzen, D. and Zwarteveen, M. (2008). Gendered participation in water management: Issues and illustrations from water users associations in South Asia. *Agriculture and Human Values*, 15(4):337-345.

Mernissi, F. (2000). *Beyond the veil: Male-female dynamics in modern Muslim society.* Bloomington: Indiana University Press.

Mies, M. (2003) *Patriarchy and accumulation on a world scale: Women in the international division of labour.* London: Zed Books.

Mohan, G. (2001). Participatory development. In *The Arnold companion to development studies*, pp. 49-54. Vandana Desai and Rob Potters (Eds). London: Hodder.

Momsen, T. (2004). *Gender and development.* London: Routledge.

Moser, C. (1989). Gender planning in the third world: Meeting practical and strategic needs. *World Development*, 17(11):1799-1825.

MOWR (2007). *Ethiopian Water Sector Strategy.* The Federal Democratic Republic of Ethiopia .Available at http://phe-ethiopia.org/pdf/ethiopian_water_sector_strategy.pdf. Accessed on 1st December, 2017

Mugenda, O. and Mugenda, A. (2003). *Research methods: Quantitative and qualitative approaches*. Nairobi: Acts Press.

Murutse, C. and Giorgis, M. (2006). On our feet: Women in grassroot development. *Journal of Women Academics,* 1(1): 165 –171.

Rached,E.,Rathgeber ,E.,Brooks,D.B. and International Development Research Centre(Canada).(1996).water management in Africa and the middle East. Challenges and Opportunities. Ottaw: International Development Research Centre.

Rathgeber, E. (2006). *Women, men and water resources management in Africa and the Middle East: Challenges and opportunities.* Ottawa: IDRC.

Rathgeber, E. (2010). *Women, men and water- resource management in Africa*. Nairobi: IDRC.

Ray, I. (2007). Women, water and development. *Annual Review of Environment and Resources*, 32(1): 421-449.

Roman, F. (2005). This is our gender person: The messy business of being a gender expert in international development. *International Feminist Journal of Politics.* Available at

http://www.tandfonline.com/doi/abs/10.1080/14616742.2014.918787. Accessed on 16th August, 2006

Sen, A. (2009). *Development as freedom*. Cambridge: Oxford University Press.

Sever, C. (2005). *Gender and water: Mainstreaming gender equality in water, hygiene and sanitation interventions.* Swiss Agency for Development and Cooperation (SDC). Available at www.deza.admin.ch. Accessed on 24th August 2017.

Shah, A., S. Wani P. and T. Sreedevi (2009). *Impact of watershed management on women and vulnerable groups. Proceedings of the Workshop on Comprehensive Assessment of Watershed Programmes in India*, 25th July 2007, ICRISAT.

The Water Act 2002: Government Printer, Nairobi.

UN Water (2010). *Expert Group Meeting on Enabling Rural Women's Economics: Institutions, opportunities and participation*. EGM/RW/2011/Report. New York:FAO, IFAD and WFP. Available at http://www.un.org/womenwatch/daw/csw/csw56/egm.htm. Accessed on 20th September, 2017.

UNDP (2006). *Fiscal space for what? Analytical issues from a human development perspective. Available at ttp://www.udp.org/content/dam/aplaws/publication/en/*publications/poverty-reduction/poverty-website/iscal-space-for-what/FicalSpaceforWhat.*Pdf.* Accessed on 30th June, 2017.

UNESCO (2006). *Promoting gender equality in education.* Bangkok: UNESCO.

UNICEF (2010). *Joint Monitoring Programme (JMP) for Water Supply and Sanitation*. Available at http://www.wssinfo.org. Accessed on 15th March, 2017.

UN-Women (2011). *Progress of the world's women: In pursuit of justice*. Available at http://www.unwomen.org/en/digital-library/publications/2011/7/progress-of-the-world-s-women-in-pursuit-of-justice. Accessed on 13th July, 2017.

UN-Water. 2012. *The UN-Water Status Report on the Application of Integrated Approaches to Water Resources Management*. New York, un-Water

Van Wijk-Sijbesma, C. (1995). Participation of women in water supply and sanitation – *Roles and realities. Technical Paper 22*. The Hague, The Netherlands: IRC International Water and Sanitation Centre.

Wilder, R. (2007). Participation of women in rural water supply and sanitation projects: Visible or invisible actors? The case of the Sub-District of Mau Bara (LiquicaTimorleste). *International Journal of Multidisciplinary Thought*, 2(4): 149-170.

World Bank (2006). *Kenya - Towards a water-secure Kenya: Water resources sector memorandum.* Washington, D.C: The World Bank.

World Bank (2008). *Progress on gender mainstreaming in the World Bank's work.* Washington, DC: The World Bank. Available at http://siteresources.worldbank.org/INTGENDER/Resources/fy09_annual_gender_monitoring.pdf. Accessed on 20th September, 2017.

Appendix 1: Informed Consent Form

Investigator: Meshack Omingo

Introduction

Greetings! My name is Meshack Omingo from the Institute of Anthropology, Gender and African Studies, University of Nairobi. I am conducting a study on**:**

THE ROLE OF WOMEN IN WATER MANAGEMENT IN MANGA SUB- COUNTY OF NYAMIRA COUNTY, KENYA

Purpose

The study seeks to explore the role of women in water management in Manga sub County in Nyamira County

Procedure

If you agree to participate in the study, you will be asked various questions related to the study. Although you will be asked certain specific questions, you will be free to provide more information that is relevant to the themes being addressed. Please ask me to explain anything that you don't understand before you make your decision as whether to participate in the interview or not.

Risks/Discomfort

There are no risks in participating in this study.

Benefits

Although there will be no direct or immediate benefit for participating in the study, the investigator will assist in answering questions that you may have. Further, the study aims at exploring the role of women in water management and the findings of this study will be of benefit to the individual survivors and the community.

Confidentiality and Anonymity

Your confidentiality will be maintained at all times during the study. The information provided will not be used for any other purpose than the one stated. The names or identifiers of participants will not be used in the report or publications which may arise from the study. True identification of participants will be concealed at all times.

Compensation

Although, there will be no direct compensation for your participation in the study, you will be reimbursed your transport expenses.

Voluntariness

Participation in the study is voluntary. You will be free to withdraw at any stage of the study and doing so will not attract any penalties or discrimination whatsoever.

I would like to know whether you have a question to ask now. If no, would you like to participate in the study? If yes, please sign the space below.

I_____ hereby voluntarily consent to participate in the study. I acknowledge that a thorough explanation of the nature of the study has been given to me by Mr./Ms._____. I clearly understand that my participation is voluntary.

Signature_____Date_____

Signature of Reseacher/Assistant_____Date_____

Appendix 2: Semi-Structured Interview Guide

Demographic Characteristics

Age……

Place of Residence……

Highest Level of Education Attained

1. Primary
2. Secondary
3. Tertiary
4. University
5. Other (Specify……..)

Occupation……..

Marital Status

1. Single
2. Married
3. Divorced
4. Separated
5. Other (Specify……)

Religion…….

Questions

1. For how long have you lived in this place?
2. What are the key sources of water and issues in the management of the resources in this place?
3. What are the uses of water for both men and women?
4. What are the gender roles associated with water?
5. Are there institutions or committees for water management? What is their role?
6. Are the committees and boards helpful to the community?
7. What is the composition of the water management institutions?
8. Do you think women should be involved in water management? Why or why not? What would be their role?
9. Are women able to participate in water management? What challenges do they face?
10. In your view, how can the challenges be addressed?

Appendix 4: Key Informant Interview Guide

Position:

Gender:

Place of Residence:

Questions

1. How is the water situation in this place?
2. What are the gender roles relating to water access and use in this area? What is the implication of the roles in water management?
3. How is water management organized? Are there committees, boards? And what are their role of these structures or institutions?
4. Are women involved in water management and decision making in the management of water? Explain why or why not. What is their role in water management?
5. Do you think women should be involved in the water management? Why or why not? and what would be their role?
6. In their participation in water management, what barriers do women face? Why do you think these barriers persist?
7. How can these challenges be addressed?

Appendix 3: Focus Group Discussion Guide

FGD Questions

1. When it comes to water, what is the role of women? What are the major uses of water for women? (Probe for the gender roles associated with water)
2. Let us discuss in water management. Are there local structures or institutions for water management in the area? Which ones are they? What are their roles?
3. What is the level of participation of women in the institutions and their decision-making?
4. Do you think women have a role to play in water management? What are these roles?
5. Let us discuss the challenges women face in participating in water management. Are there challenges in the first place? What are these challenges?
6. How do you think these challenges can be addressed?