FACTORS INFLUENCING WOMEN'S PARTICIPATION IN WATER SUPPLY DECISIONS IN KENYA: A CASE OF KIMILILI - BUNGOMA DISTRICT.[1]

BY

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DECLARATION

This research report is my original work and has not been presented for award of any degree in any university

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DEDICATION

I dedicate this research proposal to my family, who have always supported me to see to it that I succeed in this undertaking: my beloved husband Robinson, daughters Marion and Nicole, son Keicy, and my Brother Andrew and his wife Proscovia for their constant support and encouragement. Lastly, to my dear parents, Mr. Peter Musungu and Mrs. Zipporah Musungu for their inspiration and moral support.

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ABSTRACT

This study set out to investigate the factors influencing women's participation in water supply decisions in Kimilili – Bungoma district such as: culture and traditions, illiteracy, financial resources / poverty, time and distance to water points. Weinberger (2002).

Different studies have been done in different parts of the world in regard to women and water supply as indicated in the literature review of this study, yet they have all failed to raise the issue of gender in water supply decisions. This study sought to investigate and find out if what other researchers' findings and the above factors are true to Kimilili Bungoma district in Western province.

The study population consisted of 149 respondents whereby one (1) was a district water officer, seventy four (74) water committee members and seventy four (74) community members served by the thirty seven water points in Kimilili district. Perceived conceptual framework was used in the study. A questionnaire and an interview schedule was used for data collection and the received data was arranged, summarized and analyzed descriptively. It was described using , ratios, tables, frequencies and percentages. Words were used to explain the meaning of the data and conclusions were made as follows ; most women have minimal participation in water supply decisions due to culture and traditions, economic constraints and low educational background and lack of training in water management. However distance and time have minimal influence on women's participation in the water supply decisions.

The findings of this data are expected to be utilized by the Ministry of Gender and Youths, Ministry of Health and sanitation, environmentalists, and water suppliers among others in ensuring that women are involved in all aspects of management and decision making as far as water supply is concerned.

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ABBREVIATIONS AND ACRONYMS

DC - District Commissioner

DDO - District Development Officer

FAO - Food and Agricultural Development

HIV/AIDS -Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome.

IFAD - International Fund for Dedication

MDGs - Millennium Development Goals

NGOs - Non-Governmental Organizations

RWS - Rural Water Supply

UN - United Nations

UNESCO -United Nations Education Scientific and Cultural Organizations

USAID - United States Aid.

NZOWASCO- Nzoia water Services Company

UNDP - United Nations Development Program

CEDAW -Convention on The Elimination of All forms of Discrimination Against Women

CHAPTER ONE
INTRODUCTION

1.1 Background of the study.

One hundred and eighty heads of state signed the millennium declaration in October 2000 pledging to meet the Millennium Development Goals by 2015. But the first few years of the 21st centaury heightened challenges towards the attainment of these goals of escaping poverty for the millions, HIV/AIDS and other diseases, illiteracy and unclean water. Development is not about money or numerical target to be achieved by 2015, but it is about people and the focus is on basic services like health, education, water and sanitation and seeking for ways to make this services work for the poor people, services work when they include all people, WB (2004).

Drinking Water Supply is a top priority issue on world development agendas involving UN agencies and private organizations, governments, engineers, health professionals and social scientists, and most importantly, the people in the far-flung areas of the world who are supposed to be the beneficiaries of improved water supply. Women in developing countries are often referred to as water suppliers and water managers, white (2009), but they are sidelined when it comes to making decisions on water supply to match their needs and to ensure sustainability of water projects that result from such decisions.

It is also noted that over a billion people in remote rural areas and urban slums of the third world lack safe drinking water and even rudimentary sanitation facilities, USAID (1981). On the same note, women constitute 2/3 of the 1.2 billion poor people in the world. The great majority live in the sub-Saharan Africa and South Asia regions that is also home for most of the world's "water poor", those with limited access to reliable safe supplies of water for productive and domestic uses, Meena (2003).

In traditional societies women played key roles in water use and management, there is need to involve women in planning and implementing activities and strategies for the active participation of women – at local, regional, national and even international levels which can contribute substantially to the successful achievement of water and sanitation goals and objectives.

Improved water and sanitation facilities is significant for the World Health Organization goal of health for all, while primary health care, which has emerged as the leading strategy for meeting health needs in developing countries, includes, among other elements community participation, universal coverage, and accessibility of appropriate technologies for improved water supply.

Growth in water supply though essential is not enough, neither is more public spending on water supply, nor is technical adjustments. What is needed is to understand what works and why so as to ensure water supply services works by increasing the participation of local women in water supply decisions. A review of evidence from South Asia shows that female participation is minimal in water users' organizations. The formal and informal membership criteria exclude women because complying with rules and practices of the organization involves considerable time, costs and social risks. Tasha (2009).

Over the decades, Governments and other agencies has allocated massive financial and technical inputs to rural water supply (RWS) and sanitation programs, and has achieved considerable success in meeting the needs of the rural population. Yet, the results have not been commensurate with the huge investments made in this sector. As a result, water scarcity still persists.

Despite good strides, improvement in RWS lags behind. It is now clear that increased investments are not enough as projects are failing to sustain themselves. Systems fall idle and into disrepair due to poor maintenance. This is due to the perception of the rural people that water is a social right to be provided by the Government, free of cost, rather than a socio-economic resource that should be managed at the lowest appropriate level, with users who are majorly women involved in the planning and implementation of projects. With this aim in view, there is need to investigate the factors influencing women's participation in water supply decisions.

Inequitable water resource development and supply points out that, a sustainable development strategy must address the problem of inequitable allocation of resources in order to address the problems of poverty and misery due to poor participation of women in water supply decisions.

For urban water supply that is networked, access and affordability is the concern, but supply in most cases is based on policymakers and is more vulnerable to patronage politics. In rural non network water supply, community and self provision dominate. But policymaker's standard setting and capacity building misses to ensure service quality and access.

The main obstacle in the use and maintenance of improved water systems is not the quality of technology but the failure in qualified human resources and in management and organization techniques, including a failure to capture community interest which is basically - the participation of women.

1.2 Statement of the Problem

About 2 of every 10 people in developing world were without access to safe drinking water in 2007; there have been improvements but despite many global commitments, notably the UN Decade for water and sanitation, women are almost entirely absent from the water sector as advisors, planners, managers and decision makers , World Bank (2004).

The WSA (1997) addressed racial inequalities in terms of access to water and sanitation but failed to raise gender as a critical question and as part of the pressing needs. Gender has always been left out of the main objectives for addressing water and sanitation provision in the water services Act. It categorizes the needs and rights of women under category of the "poor" hence failing to recognize the fact that a gender dimension needs to transent universal categories such as the "poor' and ascertain different needs, roles and responsibilities of men and women in their respective communities

As the DWAF gender policy (1999) puts it, placing the Gender policy as a peripheral issue in processes of major water supply decisions helps to marginalize the issue and does not bond well with effective service delivery. Woodhouse (1995). This study of women, men and water resource management in Africa became a standard reference work for water resource planners, but despite its specific focus on social issues including water use, health, individual costs and

communities, it did not address the role of women in water resource management, except to note that in most African societies its considered women's work to carry water.

Studies have shown that it is poor women who often have to fight for such basic and practical needs as water, a commodity they have no say over in the manner in which it's supplied or not supplied, Amanda (2002).

Therefore this study puts forth the argument that participation is a complex process whose outcome can not be predicted easily. It investigates the gender dimension of the water supply decisions and the manner in which it addresses itself to different factors which affect men and women in water supply decisions such as traditions, economic constraints, time and distance to water points, Weigner (2001). There is need therefore to encourage visible representation of women in water projects and investigate factors affecting participation of women in water supply decisions. More detailed information concerning these factors is needed for effective project design and to ensure water and sanitation provision and management with the principles of equity, access and sustainability which can only be achieved through participation of women in water supply decisions These factors are the gap that the researcher intends to investigate in Kimilili - Bungoma district.

1.3 Purpose of the study

The purpose of this study was to investigate the factors i.e. traditions and culture, poverty, literacy, time and distance to water points which affect the participation of women in water supply decisions and who traditionally acted as water supply managers a role they have been denied in the modern society.

1.4 Research Objectives

The objectives of this research are as follows:

1. Establish the influence of culture and traditions on water supply management and decision- making among women in Kimilili-Bungoma district.

2. Identify the influence of illiteracy on women's participation in water supply decisions in Kimilili-Bungoma district.

3. Assess the influence of poverty levels of women on decisions on water supply in Kimilili-Bungoma district.

4. To establish the influence of the distance that women walk to water sources and time taken and the basis of decisions concerning water supply decisions in Kimilili-Bungoma district.

1.5 Research Questions.

1. What influence does culture and traditions have on water supply management and decision making among women in Kimilili-Bungoma district?

2. What influence is there between illiteracy and women's participation in water supply decisions in Kimilili Bungoma district?

3. What influence does poverty level of women have on water supply decision making in Kimilili – Bungoma district?

4. What influence is there between the distance women walk to water points and time taken and how does it influence women's participation in water supply decisions in Kimilili Bungoma district?

1.6 Significance of the Study

Improved participation of women in water supply decision is one of the key components for poverty reduction strategies for the attainment of MDGs. The study is meant to contribute to the

growth of knowledge on factors influencing the participation of women in water supply decisions in Kenya and also to find out the extent to which women are involved in water supply decisions. The study will benefit the government i.e. local and central, scholars in different fields, community and different households.

1.7 Basic Assumptions

The study targets a small group of women and men from Kimilili – Bungoma district. The study assumes that culture, traditions, literacy levels, time constraints and the distance a woman walks to water points affects the way in which women participate in water supply decision making in Kenya. It also assumes that the respondents will be willing to give their views freely, objectively and honestly, and that the area selected is a representative sample of women in Kenya i.e. the responses expected from the respondents from Kimilili – Bungoma district would reflect true and honest replication of the ground facts elsewhere in the country to enable the universal application of principles and strategies developed across the board. Finally the study assumes that the use of questionnaires will not significantly influence the responses of the respondents.

1.8 Limitation of the study

The study was be limited to 37 water points in Kimilili district, 74 committee members of the water points, 74 community members affected by the water points and one district water officer. This was due to scarcity of literature on factors influencing water supply decision in this area.

This study was basically concerned with factors influencing participation of women in water supply decisions in Kimilili - Bungoma district. The sample size was 74 community members, 74 committee members of the water points and one district water officer from the district. The study specifically sort to determine the impact of illiteracy, poverty, distance/ time constraints, cultural and traditional values in the implementation of water and sanitation projects especially in rural communities, on women on water supply decision, *Gender Policy (1997).*

1.9 Study Location

The study was conducted in rural villages in Kimilili - Bungoma District in Western province of the republic of Kenya as a sample of water supply points in Kenya. Information was also obtained from the District water officer and Nzoia water supply offices in Kimilili. The location was chosen to document and prove whether research done in other areas (places) on factors influencing participation of women in water supply decisions, applied to this area too as no research on factors influencing participation of women in water supply decisions in this district has been documented. The area has also been reported to have water supply problems due to its high population density and fertility rates. According to Republic of Kenya (2001), Kimilili Division had a population of 313,813 people with 164,754 being females with a total of 43,535 households. The rural population is 207,448 with 105,487 females with an annual growth rate / fertility rate of 4.3% and 51% absolute poverty. This area has a total of 3,705 households with access to piped water and a total of 10,835 households with access to portable water. It has 3 rivers (Kibisi, Kibingei and Kamusinga) with a total of 83 shallow wells and 76 protected springs, 8 boreholes and 4 dams. 19% of households have roof catchments. It has an average distance of 2 kilometers to the nearest portable water points. Source, District Development Officer (DDO) Kimilili – Bungoma district, ministry of planning and vision 2030, District data Sheet, (2008).

The district has only one (1) local authority, namely Kimilili council and four locations namely Kamukuywa, Kibingei, Kimilili and Maeni with eight sub locations

Table 1.1 Kimilili - Bungoma District: Area and administrative units

	Area (Km)	**No. of Locations**	**No. of Sub-locations**	**Names of Locations**
Kimilili	179.7	4	8	Kamukuywa, Kibingei, Kimilili and Maeni

Source: KNBS, Bungoma 2008

1.10 DISTRICT FACT SHEET

The district's fact sheet contains information regarding the resources available in the district and other data that is relevant for planning and economic management of the district. This includes socio economic indicators that may guide investors and researchers.

Table 1.2 Kimilili - Bungoma North Data Sheet

Area in Km2		555.6
Topography and Climate		
Altitude	Highest	1800m
	Lowest	1200m
Rainfall seasons: Long rains		March-August
Short rains-		September-November
Temperature range:		26
Highest		12
Lowest		
Mean Annual Temperature		19
Demographic and Population profiles		
Population size		males females totals
2008		62,466 69.461 131,927
2010		70,561 78,463 149,024
Population structure:		
Total number males (2008)	Male	149,059
	Female	164,754
	Total	313,813
Female/male sex ratio		1:1.1
Water and sanitation		
No of households with access to piped water (2 water project)		1,305
No. of households with access to portable		1,865

water	
No. of permanent rivers (Rivers Kibisi, Kibingei and Kamusinga)	3
No. of shallow wells	54
No. of protected springs	51
No of boreholes	03
No. of dams	3
No. of H/holds with roof catchments	2
Average distance to nearest portable water points	2km

Source: KNBS, Bungoma 2008

1.10 Definition of significant terms used in the study

Water Supply	– The process of self provision or provision by third parties in the water industry, public utility.
Women's Participation	– involvement of women in the water supply decisions
Borehole	– An artificial hole that is constructed for the sole purpose of providing water.
Distance	– the length in terms of meters or kilometers taken to reach the nearest water point
Illiteracy	– the incapability to read or write.
Culture	- A people's way of living
Restricted mobility	- the tendency of staying at home by the women contrary to men
Gender	- refers to attitude, characteristics, rights and values that are determined, shaped and perpetuated by the society
Gender Policy	– A plan or program that addresses specific gender needs.
Poverty	– State of insufficiency in terms of basic needs
Water point	A place where water is fetched.

CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

The chapter seeks to bring out the factors influencing the participation of women in water supply decisions. It clarifies variables such as culture and traditions, illiteracy, poverty and distance to water points and shows what other researchers have done and relate them to this study. The chapter is organized according to the above variables basing on the conceptual framework drawn at the end of this chapter. First the gender theories are discussed, followed by the historical background of women and water supply, factors influencing women's participation in water supply decisions and finally the conceptual framework.

2.1 Gender theories

The term gender refers to the social or cultural characteristics assigned to women and men as they grow up as members of a given community. Society has over time come to expect that men and women will perform certain duties and that they will behave in certain ways because of their biological differences. Gender based division of labour is prevalent under which duties are allocated on the basis of one's sex, Berkeley (2003)

Men have always been afraid that women could get along without them, Mead (2006). In addition to age, gender is one of the universal dimensions on which status differences are based. Unlike sex, which is a biological concept, gender is a social construct specifying the socially and culturally prescribed roles that men and women are to follow According to Lerda (1998), in the creation of patriarchy, gender is the" costume, a mask, a straitjacket in which men and women dance their unequal dance". As Wolfe (2004) reports, of all the ways that one group has systematically mistreated another, none is more deeply rooted than the way men have subordinated women.

In all countries of the world , women continue to exist in roles and relationships that often make them subordinate to men because they are paid less than men for the same job, their movements are restricted and they are not permitted to take on higher status work, Kabeer (2003) He continues to say that despite the fact that many governments in the world have ratified

international gender instruments such as CEDAW (Convection On The Elimination Of All Forms Of Discrimination Against Women), gender inequality persists.

Gender inequality through the lens of the MDG's, particularly the first one of halving world poverty by 2015 explains that gender equality merits specific attention from policy makers , practitioners and researchers because it's a feature of social relations in most societies and structures of production in different societies, Neimanis (2007). Efforts to promote the productivity of the poor are largely targeted to men while women are expected to carry on contributing to household livelihoods and caring for the family with little or no recognition or support for efforts, UNDP (2007).

In 1980 the UN summed up the burden of this inequality: Women, who comprise half the world's population, do two thirds of the worlds work, earn one tenth of the world's income and own one hundredth of the world's property. In Leviticus, God told Moses that a man is worth 50 shekels and a woman worth 30.

In Bukusu and Tachoni culture, women are to a great extent subordinate to men and by extension depend on them. Women have less decision making power and lack access to information. The disparities in gender access to information have been identified as a major cause of slow socio-economic growth in the district. However, since both the government, the community based organizations and NGO's recognize the need for participatory development approaches, the district will strive to ensure gender issues are addressed to foster faster and equitable development. This is more so due to the fact that in the district most of the labour force in the farms is composed of women as in other parts of the country. In Bungoma North, women perform most of the domestic chores. There is, therefore, a need for interventions that will relieve women of some chores and hence free more of their time to devote to other productive duties. The bias towards the girl child education still exists, though not that pronounced. However, campaigns will continue with the aim of addressing the issue so that universal education is achieved by both sexes in the district

2.2 The Historical background of women and water supply decision.

The Africa women and water Conference held on Monday March, 10, 2008 that took two days at Nairobi Kenya organized by: A single drop, crabgrass Groots – Kenya women's earth Alliance in partnership with Greenbelt Movement discussed the involvement of women in every aspect of development (www.africa women and water.org).

Throughout history, women have played an important role as stewards of water. According to FAO of the United Nations, women are most often the collectors, users and managers of water in household as well as farmers of crops. Women and children provide nearly all the water for the household in rural areas. In urban areas women are often in charge of accessing clean water and ensuring sanitation for their families. Women hold the knowledge about quality, location, reliability and storage of local water sources. This leaves them with little or no time for other activities like getting education. The UN estimates that in some parts of Africa, women and children spend eight hours a day collecting water. International and UN Global conferences have repeatedly recognized that effective sustainable water resources management depends on engaging women at all levels of decision-making and implementation. It is recognized that the exclusion of women from the planning of water supply and sanitation schemes is a major cause of their high rate of failure

However women have often been denied their human right to water and are continually excluded from key decision making roles which have led to environmental destruction, deterioration of human health, and the feminization of poverty, WHO (1990).

The African women and water conference creates the space for women to exchange technologies and best practices that are both practical and attainable www africanwomenand water.org (2000).

In 1996 UNESCO launched a special project entitled "Women and water: Resources supply and use" to be implemented in the sub Saharan region of Africa, as part of the International Hydrological program. The project aimed at improving the quality of life of women in rural and urban areas in Sub-Saharan African countries, by facilitating their access to water resources and by improving water resource management. The project is a follow-up to the fourth world conference on women (Beijing 1995).

Its main objective has been implementation of National and regional policies to facilitate women's involvement in water resources development programs, the organization of training courses at National and Regional levels, the publication of learning material, the development of studies and research Today it aims to disseminate and share information and spread a message of peace based on a fair distribution of water.

2.3 Meaning of water supply

Water supply is the state of self provision or provision by third parties in the water industry, commonly a public utility of water sources of various qualities to different users. It can also be defined as the total amount of water available for human and other uses. Florida (2000). He refers to water supply as the share of water abstraction which is supplied to users. It means the sources, wells, pumps and intake and storage structures from which water is supplied for any purpose. Publication/Fresh water Europe (2005).

Water is the source of life and civilization. Over years women have always been the ones to find water, choosing their sources according to certain criteria such as accessibility, availability, distance and time (UNESCO 2009). Women in developing countries are often referred to as water suppliers and water managers. Daily collecting of water is always the responsibility of the women and it is women who decide on how it is to be used within the household.

However women are almost entirely absent from the professional sector. It's essential that women become more involved as advisors, planners, scientists in all areas from academia to government services, UNESCO (2009). The following are the factors that influence women's participation in water supply decisions.

2.4 Factors influencing women's participation in water supply decisions

This section discusses the factors influencing omens participation in water supply decisions in different parts of the world such as culture, traditions, illiteracy, poverty and distance to water points. It shows what other researchers have done and relates them to this study.

2.4.1 Culture and tradition

The need to focus more explicitly on women is becoming more urgent since the number of poor households headed by women has expanded rapidly especially in Africa, East Asia and Latin America(Leonard 1990).These households were found on average, to have less access to productive resources because of cultural and economic constraints. Mustafa and Osama et al (1992).

Women's knowledge and experience in the supply and use of water is invaluable and many problems could be avoided if women were consulted on such items as local sources of water, the location of a well and design of a pump, UNESCO (2008). Low participation of women in water supply projects is due to cultural constraints which prohibit women from freely expressing themselves and engaging in discussion in public gatherings of women and men, Mustafa and Osama (1992).

In Asia for instance, married women unlike their unmarried counterparts, have to ask for permission from their elders of the family or from their husbands to attend public meetings. Also married women are forbidden to say their names in public. They can only do so through a proxy lest they show disrespect for their husbands, Meena (2009).

There is insufficient account of the special needs of women arising from their biological and gender roles. This is evident in the fact that posts requiring skilled labour and physical strength such as trench digging and concrete making for the building of the reservoirs are mainly filled by men, UNESCO (2008) and in cases where digging of trenches pass near homes, in some communities women are told that culture forbids them to enter or pass near them, Tasha (2009).

According to Meena (2009), in India it may take years for men in rural communities to accept women in official decision making or managerial roles in water, agriculture and health projects. In Kenya although women emerge as the main beneficiaries of improved water management, in the community, their substantial contribution are largely hidden behind social norms regarding gender roles and relations, UNESCO (2009). Just as women need to be involved in decision making, management and maintenance, so men should be encouraged to take a fair share of the time and labour which is so often expected of women. There should be a moving way of

assumption that when executing projects, men are responsible for public 'sphere' and women for the private sphere.

According to IFAD (2003),even at household level, prevailing power relations between men and women usually ensure that the water needs of women receive a lower priority than those of men, although the economic contribution of women's work can be of significant to households in often strictly controlled, both directly and indirectly by existing culture, norms and practices, Rudolph (2007).

White et al (1972) also noted that husbands determine the arrangements, such as the site of a house or investment of money in equipment, which make the job light or heavy. This research revealed that women were not significant decision makers even with respect to domestic water use and sourcing. This notion has been uncritically accepted, time and again, in the design of water projects around home.

Although research in 1990's demonstrated that African women are active participants in economic development, there has been relatively little systematic factoring of gender considerations into resources allocation decisions Despite substantial evidence of the economic profitability of this approach, traditional assumptions about the domestic roles of women continue to guide policy-makers.

White continues to say that development work in the area of water resource management in Africa has tended to build on traditional views about the roles of women. Although there has been increased emphasis on ensuring that women receive training in water pump repair, maintenance and in organizing women's groups to manage village water systems, priorities have been set with assumptions that women's strategic interests lie primarily in the fulfillment of their reproductive role.

Dank leman (1988) adds that, inevitably it is men who have the greatest voice on water committees and women who are expected to provide labour, to ensure the success of their husbands

2.4.2 Illiteracy

Women's participation and exposure to information is still limited. Some of the barriers to involving women in water supply decisions include high levels of illiteracy, which makes written information inaccessible, UNESCO (2008).According to the American Journal of tropical Medicine and Hygiene(1999),For decisions about where a pump needs to be placed and what needs to happen to make sure that water supply and sanitation facilities are in good order is all done by men due to increased women's illiteracy levels.

Nepal (2008) shows the unfortunate consequences of not taking into account gender needs in project planning. Illiteracy i.e. lack of awareness among community members is one of the problems and constraints encountered in the management of water supply schemes. Women are not involved in decision making steps because most of them are illiterate so its time taking to mobilize and strengthen the resource for increasing access of safe water.

In sub-Saharan Africa, few women have access to higher education and women's participation in agriculture, forestry, hydrology and other water science related educational programs is very poor. Lack of the women at the advisory and policy making levels is largely due to the disparity between the levels of women's and men's education, UNESCO (2008).

Amunyelet (2005) asserts that another way to improve women's participation in studies and research in water supply would be to facilitate their access to the new means of communication by training them to use computers and internet. Promoting women's access to the networks will enable them not only to exchange their knowledge, ideas and experiences but also to improve their co-operation.

The training of women and girls in the ethics of water use is not only essential but crucial for the generations to come. Technology is necessary but not sufficient. In many countries the relationship between women and water is a complex issue that can best be tackled by a multi-disciplinary approach including social sciences, cultural and ethical aspects. The scientific community is therefore called upon to work together in order to overcome lack of information, cooperation and coordination at all levels, Edgard (1997).

II AD (2007), rural women often undervalue their knowledge and capabilities and thus they do not volunteer to participate in water projects even if it may interest them moreover. Due to their already high workload and responsibilities (domestic and production).Women involved always lack awareness of gender issues.

The lack of transfer of skills in the form of skills development robs women an opportunity for meaningful participation and contribution to the water projects white (2009). He adds that technical training and adequate participation of women are some of the key objectives, most water projects have not succeeded in addressing their needs. White concludes that training is therefore an essential element of addressing gender equity. Training ensures project sustainability after the contractors have left. It's essential that women are afforded training since they are directly affected by non-functioning water and sanitation systems. It should be conducted in local languages and participants should be awarded certificates to motivate them.

2.4.3 Financial constraints/poverty

Much of the difficulty in instituting the utilization of safe water supply sources has to do with the rather low economic status of women as the main water collectors. Poverty consigns women to long periods of work in activities or jobs that bring little reward, Patel (1996).

High prices charged for water, force poor women to buy from vendors or use contaminated unsafe water. A woman living in a slum in Kenya pays at least five times more for one liter of water than a woman in the US, UNESCO (2009).

As Nepal (2008) puts it, the underlying course of women's limited access to water is the greatest poverty of female headed households. For every water supply scheme there should be equitable post in every step from planning to the management so as to have accountability and sustainable development.

Women can be considered as victims not only because of the direct impact of environmental degradation but also because of their economic status. The 1991 UNDP report recognizes the gender biases in poverty. Women form the larger proportion of the world's poor and they make

up the greater number of refugees in the world, it being estimated that 80 per cent of refugees are women and children. UNESCO (1997).

In the international conference of water and environment, women place a central part in the provision management and safeguarding of water. This role of women as providers and users of water has seldom been reflected in institutional arrangements for the development and management of water resources. Acceptance and implementation of this principle requires positive policies to address women's specific needs and to equip and empower women to participate at all levels in water resources programs, including decision making and implementation in ways defined by them. Meinzen and Zwarteveen (1998).

In Sri-lanka, examination of 753 women's projects reveals that almost 85% of projects are successful in terms of their income generation. To a woman in the rural sector achieving an income offers financial strength in but the domestic sphere and in society Yet much of these earnings is spent on family welfare and very little is spent to meet their own needs. ANOJA (1993).

Women who work in water projects in South East Asia have been particularly hard-hit by fluctuations in international markets and by new technologies. To escape poverty, hundreds of thousands of women have migrated from their own countries to seek employment, often as domestic workers in the Middle East where despite better wages; they face social and psychological isolation and abuse. Few find that the wages they have sent home have been invested wisely. Nor have new jobs in industry necessarily improved the lot of women they have been the first to be laid off in recessions. many do badly paid piecework at home. NoeleeN (1989).

The trend towards the feminization of poverty is exacerbated by migration to urban areas, often by husbands and sons leaving their homes to find employment Oftan fe7er than half the families remaining at ho-e receive money from absent males. (WHO 1990).The need to focus more explicitly on women is becoming more and more urgent since the number of poor households headed by women as expanded rapidly especially in Africa, East Asia and Latin America (Leonard 1990)*This households were found on average, to have less access to productive

resources because of economic constraints. In several countries, discriminatory practices, credit and poverty ownership, prevent women from participating fully in the economy. Mustafa et al (1992).

2.4.4 Time and distance to water points

Nepal (2008) explains the unfortunate consequences of not taking into account gender needs in project planning. The intervention resulted in advertently increasing women's burden. In all communities involved in the Nepal research women complained that their water collection time significantly increased (nearly four or five times) after they received the improved water services. This is because the water taps stand along the roadside making it shameful for them to bathe and wash their clothes freely where males can see them. This makes them carry water several times each day spending significant amounts of energy and time

200 million hours are spend everyday walking to collect water (White 2008), says it's a huge opportunity cost for women who could be working paying jobs or girls who could be in school. According to the African women and water conference in Nairobi (June 2008),the average distance a woman in Asia and Africa walks to collect water is 6km,the weight of water that women carry on their heads is equivalent to the baggage weight on airlines (20kg).

Some women reported waiting until dark to undertake the activities of bathing and washing, Nepal (2008) As the collection of water can take up to 60 percent of women's and girl's time it is not surprising that it is the reason why most young girls abandon school. It's also an obstacle to their participation in formal education programs. The carrying of water for long distances is a health hazard especially during development and pregnancy periods, Assian (2006).

Rural women often undervalue their knowledge and capabilities and thus do not volunteer to participate in water projects even though the projects may interest them. Due to their already high workload and responsibilities (domestic and productive), women often have limited time for project activities. (IFAD 2007).

2.5 Conceptual Framework

Figure 2.1 shows the perceived conceptual model which encompasses the major variable and their possible patterns of influence on each other and eventually on participation of women in water supply decisions. The conceptual framework applied in figure 2.1 identifies the dependent variable in this case being participation of women in water supply decisions. It also identifies the independent variables such as illiteracy, poverty/financial constraints and time and distance to water points. It also identifies culture and traditions as moderating variable.

Women's low participation in water supply projects is due to the cultural constraints which prohibit them from freely expressing themselves and engaging in discussions and public gatherings of women and men. For instance, in Bukusu and Tachoni culture in Kimilili, women are to a great extent subordinate to men and by extension depend on them. Women have less decision making power and lack access to information.

Illiteracy is another factor that influences women's participation in different development issues There's lack of awareness among women (illiteracy) and this makes women have less management and decision powers hence increasing the disparity between men and women in the way they participate in development matters such as water supply decisions. This is due to a large gap between men and women's levels of education.

Poverty and financial constraints on the other hand influences women's' participation in water supply decisions. Women instead of attending committees on water project, they are normally engaged in long periods of work in activities or jobs that bring little reward. In places/ countries, poverty prevents women from participating fully in the economy such as water supply decisions.

Rural women spend significant amount of energy and time carrying water. Due to this high work load and responsibility, they have limited time for project activities such as water supply management and decision making.

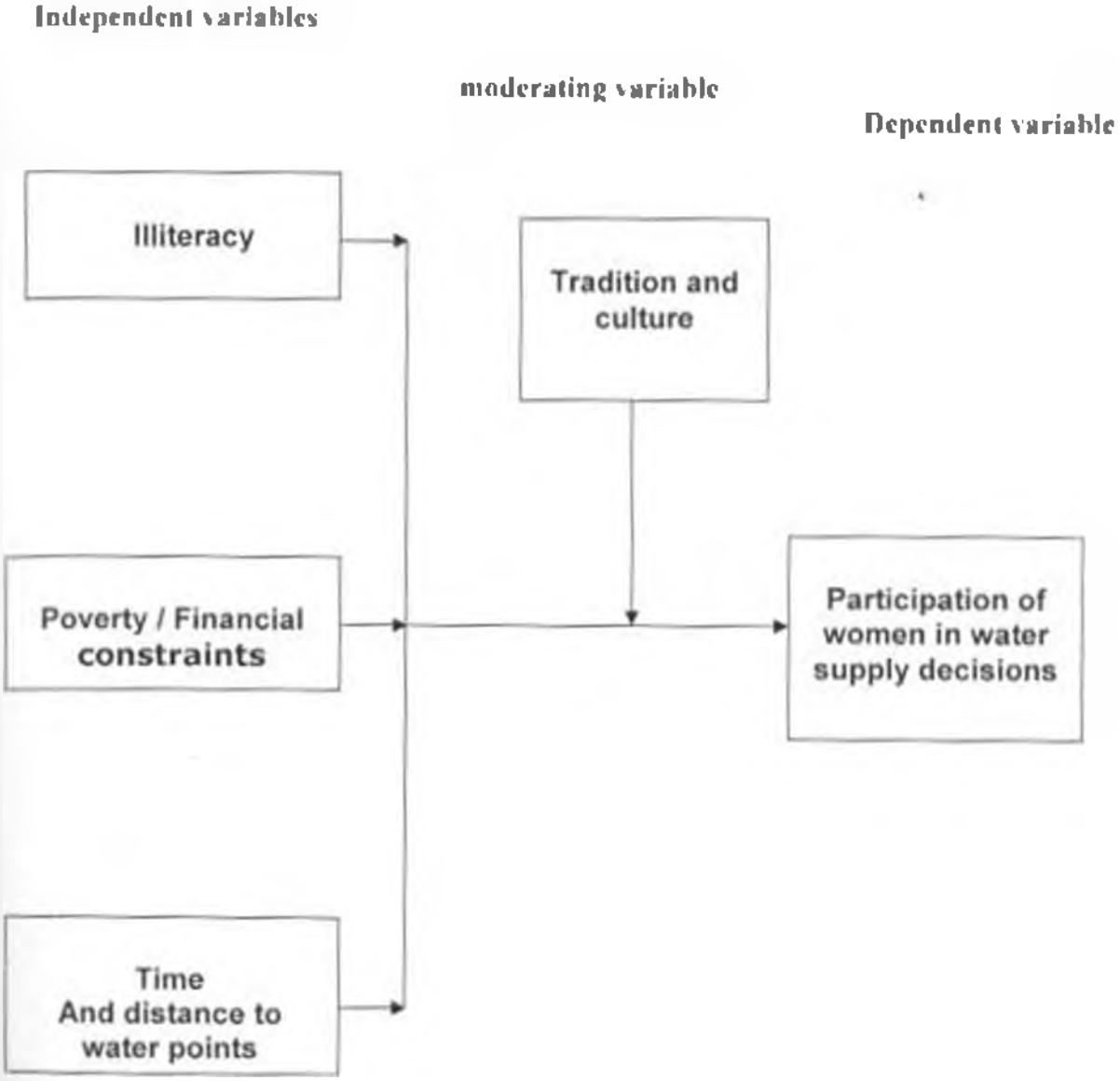

Figure 2.1: Perceived Conceptual framework on factors influencing participation of women in water supply decisions Kenya.

2.6 Summary of Literature Review

The above literature was mainly concerned with factors influencing women's participation in water supply decisions. The factors included in the review were: culture and traditions, illiteracy, distance/ time and poverty. Other issues highlighted in this chapter are the definitions of gender and its theories.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter comprises of the methodology used in this study, research design, sampling procedures and sample size, data analysis and interpretation. The methodology selected for this study is expected to yield reliable results for effective recommendations at the end of the study.

3.1 Study area

Kimilili- Bungoma district lies at the northern tip of Western Province and borders Trans Nzoia district to the north, Bungoma North district to the east all the way to the south, Bungoma East district to the southwest and Bungoma West district to the northwest. . It covers an area of 178.7 km, which is about 2.7 per cent of the total area of the province. The District has one constituency and six civic wards.

3.2 Research design

Research design refers to overall conception of the study including description of all concepts, variables and categories, the relational propositions and the methods of data collection and analyses, Mugenda (2008). This study will therefore use descriptive statistic to describe the sample which is a group of individuals. Variance and standard deviation will be preferred to measure the dispersion while the mean, median and mode will be used to measure the central tendency

The most attractive attribute of descriptive research design for which the researcher prefers to the other methods is that apart from enabling direct generation of information, it creates the opportunity for in-depth responses through sharing on the past, present and future possibilities that provide a good understanding of the phenomenon under study.

Descriptive studies are commonly used when examining social issues that exist in communities such as illiteracy, culture, traditions among others. This research design will therefore facilitate discussion of sensitive issues such as illiteracy, poverty, time constraints and distance covered to

fetch water among other factors that affect women participation in water supply decision making through scheduled participatory interviews with focus groups.

3.3 Target population

The term population refers to the entire group of individuals, objects or things that share common attributes or characteristics and may or may not be found within the same geographical location. Target population is the total population that the researcher specifies in his or her research, Mugenda (2008)

The target population will consist of thirty seven (37) water projects or points. This includes piped water projects, protected springs, bore holes, dams and water tanks.

Kimilili district has 12 sub-locations hence 12 sub-chiefs will be used to identify the 37 water points and one district water officer Will be used to identify these water points.

3.4 Sampling procedures.

Simple random sampling was used to select the two members of the committee per water point where by names of all the members were written on pieces of papers and all men's names put in one container and names of all females put in another container. One piece of papers is picked from each container and recorded and returned into the container to minimize on the error:. This procedure is repeated for the second container with names of all females.

This method of simple random sampling is called the lottery method and is convenient for studies involving small samples as it can be tedious, Mugenda (2008). This will give rise to 74 members of the committee (37 men and 37 females).

Purposive sampling where key informants who are knowledgeable on local conditions and the issue at hand helps to identify the best participants, Mwanzia (2008), will be used to identify the District water officer who will be used to identify all the water projects and have names of committee members to be used in this study.

Convenience sampling was used to select two community members, one male and one female from each of the 37 water projects Participants in this case are selected on the basis of availability, provided they meet other pre-determined criteria. Mwanzia (2008), as usual beneficiaries or users of the water resource. This will yield a total of 74 participants (37 males and 37 females).

Proportionate sampling was used where a higher percentage of water projects were picked from a category with high number of projects while a lower percentage number of projects was picked from a category with low number of projects. This lead to a sample size of 37 projects which is 32% of the total number as shown in the table below.

Table 3.1: sample size of projects

Category	population	Sample size
shallow wells	54	17
protected springs	51	15
Boreholes	3	3
Dams	3	3
Piped water projects	2	2
Water tanks/roof catchments	2	2
Total	115	37

3.5 Method of Data collection.

This study used two instruments to collect data, administration of questionnaires and use of interview guides to help probe for more information that would not have been captured effectively in the questionnaire.

The study used questionnaires for the committee members and the community members who could read and write and interview schedules for the case of those who did not know how to read and write for primary data collection. The choice of instruments was informed by the nature of the data to be collected the time available as well as the objectives of the study. The study is

mainly concerned with finding out views, opinions, perceptions, feelings and attitudes of the respondents' .such information can be best captured by use of these two instruments. The questionnaire and the interview schedules will contain both open and close ended questions as to encourage complete responses from the respondents.

The researcher with the help of the University of Nairobi supervisors constructed the questionnaires after which they were pilot tested on an independent group of committee members and the community members from a neighboring Bungoma North district who would not take part in this study to check on the reliability and validity of this instrument. The researcher and her assistants will apply direct contact to explain the purpose and significance of the study, clarify points, answer questions and motivate respondents to answer questions carefully and truthfully, Deobold (1979).

3.6.1 Questionnaire. this was both a close and open ended questionnaire to make it flexible for all kinds of opinions relevant to the study and this will include the factors influencing women's participation in water supply decisions such as culture and traditions, illiteracy, poverty and time and distance to water bodies (independent variables) The questionnaire will also seek opinions on participation of women in water supply (dependent variable) and find out how the independent variable influences the dependent variable This Instrument will be pre-tested on a small sample that is similar to the one under study to check its validity and reliability.

3.6.2 Interviews: This instrument was used to gather evidence of planned or ongoing projects of the sampling units and to probe further for any details necessary to the study but not captured comprehensively in the questionnaire. It was held face to face with the aid of an unstructured interview schedule. The District water officer was interviewed on issues such as the procedures of identification, designing, financing and supervision of projects, records in the department, how to improve the competencies of water, their general view of the participation of women in decision making on water issues the question of what could be done to improve the competencies and participation of women on such bodies will also be raised. The interview questions were developed through reading relevant books on the topic under study. In this case, only open-ended questions will be developed. The responses will be analyzed descriptively. This instrument was

also be **pretested** (pilot tested) in a similar sample but from a location not involved in the real research. In general 4 data collection assistants were trained to help in administration of these instruments.

3.6 Instruments' Validity and Reliability

Mugenda and Mugenda (2002) explained **Reliability** as the degree to which a research instrument will yield consistent results after repeated trials. The researcher used test re test in order to test reliability of the research instruments. Research instruments may be re tested on a sample of at least ten respondents who do not have to be representatives. Mulusa (1990).

In this study five water points were sampled to get ten respondents, a second time being after two weeks and the correlation between the two sets of score computed. A person product moment formulae was administered and correlation coefficient calculated. A score of +0.5 was be considered a good measure of reliability.

Pearson product moment correlation.

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{(n\sum x^2) - (\sum x)^2 (n\sum y^2) - (\sum y)^2}}$$

Validity, according to Mugenda and Mugenda (2002) refers to the accuracy and meaningfulness of inferences made based on the results obtained. It is asking a relevant question framed in the least ambiguous way. This research adopted the 'content validity' technique to measure the validity of instruments to be used. Content validity enables data being collected to be reliable in representing the specific content of a particular concept. It involved designing an instrument that would yield content valid data and these was subjected to subjects of a similar sample, and inferences made compared to existing theory. Content validity of the instruments was established in three stages.

The researcher critically considered each item to see if it contained a real representation of the desired content and see if it could measure what it was supposed to measure after considering the constructs to be measured.

The developed instruments were then being presented to the supervisors of the project and research experts to evaluate the applicability and appropriateness of the content, clarity and adequacy of the construction of the instrument from a research perspective.

A field test was conducted with a pilot of 5 water points randomly selected in Bungoma North district to ensure content clarity of each research instrument. Respondents were requested to carefully complete the instruments and critique the format and instructions. Upon completion of the pilot study, the data was reviewed and the items that were not being clear modified accordingly. A pilot study was conducted in the neighboring Bungoma North district not involved in the final study to avoid contaminating the final actual sample. Content validity was determined to establish representation of the items with respect to the objectives of the study, Wiersma (1991).

3.7 Data collection Procedure

Before proceeding to conduct the study, the researcher obtained an introductory letter from the University of Nairobi to enable her get a permit from the District Commissioner Kimilili – Bungoma district. A letter was also obtained from the District Water officer as a courtesy. Copies of notification to carry out the research were availed to the sub chiefs and different water management committees the researcher intended to obtain data from.

3.8 Data Analysis techniques

Data analysis refers to examining what has been collected in the field and making deductions and inferences. It involves uncovering the underlying structures; extracting variables, detecting anomalies and testing any underlying assumptions. Quantitative research involves coding responses into **categorical variables** followed by application of a method of analysis, Kombo and Tromp (2006).

The findings of this study were analyzed using **content analysis method** (Mugenda and Mugenda) which refers to a systematic qualitative description of the objectives or units of study (categorical variables.) and determines the intensity with which certain themes or phrases have been used. It involves a detailed description of the objects/items units that comprise the sample.

In interpreting the results, the frequency with which the ideas appeared was interpreted as a measure of importance, attention or emphasis. The specific classification system used to record information for this research was the **Designation content analysis** which determines the frequency and trends with which concepts of the objectives were mentioned. The relative balance of favorable attribute regarding the objectives theme was interpreted as a measure of direction or bias. Tabulating data and presenting them on statistical bar graphs was also be used to give a visual display of the findings' trends and for ease of reference.

Individual units about which descriptive and explanatory statements will be made, the sampled content will be analysed using chapters, paragraphs, phrases and sentences. Groups of data helped in application of statistical bar graphs, pie charts, histograms and finally the compilation of results and interpretations was be made.

3.9 TABLE OF OPERATIONAL DEFINITIONS OF VARIABLES

DEPENDENT VARIABLE

OBJECTIVE	VARIABLE	INDICATORS	MEASURES	SCALE
	Participation in water supply decisions by women.	- Representation of women in project committees. - Deciding the location of the water point. - Management of the water point by women. - Maintenance of water projects by women. - Construction of the water point by women. - Ownership of the water point (men/women)	- To know the number of women on committees verses the men. - Attendance of women in these committee meetings. E.g. how often. - Frequency of attendance. (Reasons) - To know who decided the location of a water points. (Men/women)	Ratio Runking Interval Nominal interval

			- Reasons - Who are in charge of the maintenance of water point's men/women ? - To give reasons. - Do they hold any positions in the committees? - Who owns the water points. Male / female.	interval Nominal

INDEPENDENT VARIABLES

OBJECTIVE	VARIABLES	INDICATORS	MEASURES	SCALE
OBJECTIVE 1 Establish the influence of culture and	Culture and traditions.	-Beliefs about gender roles -Unwillingness to drop negative	- Can women sit under committees? Give reasons?	

traditions on water supply decisions in Kimilili Bungoma		traditions. -Ignorance of modern knowledge.	-List roles of men in water supply. -Who decides the location of (site) a borehole/ water tank in the home? Men or women. -What is your source of water? Tap, river, bore hole, pumps.	Nominal / interval
OBJECTIVE 2 Identify the relationship between illiteracy and participation in decision making in water supply	Illiteracy	-Not able to read. -Not able to write -level of education -Lack of ICT infrastructure -women who never attended school. -No. of trained women / no. of trained men on committees	-Ask whether they can read or write. -Ask whether they attended school and up to which level. -Can they make a phone call? -No. of committee members who are trained.	Nominal Internal Nominal Ratio
OBJECTIVE 3 Asses the influence of poverty levels of women on water supply decisions in Kimilili	Poverty	- High unemployment - Low participation in local commercial enterprises - Low wages	-Are you employed? Whether permanent / temporal or self? -Are you involved in any local	Nominal Ranking Nominal

Bungoma district.		- Lack of infrastructure for information and communication - High school drops out rate - Access only to ground water (rivers, ponds, etc) - Rural urban migration - Menial occupations (Unskilled labour.)	commercial enterprise? -How much money do you get per month? -Which mode of communication do you use? Cell phones, letters, none? - Do you stay with your husband?	Ranking Nominal
OBJECTIVE. 4 Establish the relationship between the distance women walk to water sources and time taken and the basis of decisions concerning water supply decisions in Kimilili – Bungoma District.	Time constraints / distance to water points.	- Access only to underground water (Rivers, ponds e.t.c) for drinking and living. - Lack of piped water, boreholes and pumps in homes - People carrying water on their heads/ backs. People using animals, bicycles,	Where do you get water for drinking and using in your households? Which type of water point are you served with? Boreholes, water tank, springs e.t.c How do you carry water from the source to the house? Use people, animals,	Nominal Ordinal Ordinal

		vehicles to carry water from water points. The source of water being 15 mins away (30 mins round trip) (UN 1998)	bicycle. and vehicle? Who carries this water? Male or female. Reasons? How long do you take from home to the water point? How far is the water point that serves you? Does the time and distance covered affect other activities	Ranking Interval Ordinal Ordinal Normal

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION OF THE FINDINGS

4.0 Introduction

This chapter presents the results of the findings. Data has been organized and interpreted as per the objectives of the study and demographic information of community members and committee members and handled as deeply as possible. The study was guided by the following objectives: To establish the influence of culture and traditions on water supply management and decision-making among women in Kimilili-Bungoma district, identify the relationship between illiteracy and women's participation in water supply decision in Kimilili-Bungoma district, assess the influence of poverty levels of women on decisions on water supply in Kimilili-Bungoma district and to establish the relationship between the distance women walk to water sources and time taken and the basis of decisions concerning water supply decisions in Kimilili-Bungoma district.

4.1 Questionnaire return rate.

Out of 149 questionnaires that were delivered i.e. 74 questionnaires to 74 community members served by the selected water points and 74 other questionnaires to the 74 committee members on the various water projects, 134 (89.9%) were returned dully filled and 15(10.06%) were not returned. The table below shows this information.

Table 4.1 Questionnaire return rate.

Questionnaires		Number	Percentage %
Delivered	149	100	
Returned	134	89.93	
Not returned	15	10.06	

4.2.1 Demographic information of respondents

In this part general information of respondents was analysed by use of frequencies and percentages i.e. gender, education levels and distribution of water projects / points in the district.

4.2.2 Gender of committee members

The study revealed that most committee members of the water projects were men Out of the 60 committee members who filled the questionnaires, 40 members (67%) were men while 20 (33%) were women. The table 4.2 and figure 2 below shows the information above.

Table 4.2 of committee members.

Gender	Number	Percentage
Male	40	67
Female	20	33

This shows that women should be encouraged to take leadership positions in the water supply as they can compete men on the same footing though the small number can be explained. Female, face obstacles in access to educations as they are busy fetching water and attending to other household chores while then male counterparts attend school. The distance a woman walks to a water point takes most of her time. She also takes more time generating income from other activities in order to provide for her family.

4.2.3 Professional Qualification of respondents

The research found that out of the 62 women who were interviewed, there is none of them that has received training in water management e.g. water pump repair, maintenance of water machines despite their counterparts where by 10/134 (0.075) have received training in the above Only 2 women (2/134) 0.01492 have participated in organizing women groups to manage water systems. This shows that there is need for women to engage in different kinds of training, concerning water supply in order to actively participate in its improvement.

4.2.4 Background information on sampled water points

It was also revealed from this research that most of the piped water is used by people around the urban area. i.e. Kimilili township division while the other sources of water were mainly concentrated in the rural areas of Kimilili district, as shown in the table below.

Table 4.3 Distribution of water projects in the district

Water name of project	Location	Frequencies
	Rural (no of projects).	Township (no of Projects)
Wells	44	10
Boreholes	2	1
Dam	2	1
Cement tank	2	0
Protected springs	49	2
Piped water	0	2

The above table is a clear indication that out of the 2 projects of piped water none of them serves the rural people. This is a socio economic indicator that should be improved by the developers and investors in the district This disadvantages women in the rural areas whereby while the rural women spend more time going to fetch water from various water points; those in town get this water so easily from their households.

4.3 Factors influencing women's participation in water supply decisions.

4.3.1 Participation of women in water supply.

Out of 60 committee members in the district 20 were women, representing 33.33% of the composition. It was also found that attendance to committee meetings was biased towards men as indicated in figure 3 below.

Out of the 40 men interviewed 38 (96 %) responded to be attending all meetings while only 2 out of 20 (10%) women that were interviewed responded to be attending all meetings. This indicates that women are poorly represented in decision making (meetings) .

Table 4.4 meeting attendance table.

Gender	Meeting attendance	
	Attend all	Do not attend all
Male	38	2
Female	2	18
Grant total	**40**	**20**

The reasons for this lack of participation in decision making are shown in figure 4 below where 1 out of 2 men who failed to attend committee meetings cited lack of time as the reason compared to 6/18 of the women or 33.33% who cited the same reasons for there lack of attendance to committee meetings.

Table 4.4 above further indicates that 124/134 (92%) of the respondents felt that women are not well represented in water supply decisions with only 7.4% or 10/134 being of the view that women are well represented in water supply decisions.

On the issue of whether women are actively involved in constructions of water points like wells, boreholes, water tanks etc 126/134 people that were interviewed strongly disagreed on this with

only 8/134 (5.88%) of the respondents in agreement. This is a pointer to lack of women's participation in water supply decisions.

On the issue of whether women are in charge of water points 132/134 of the respondents (98.5%) disagreed with only 2/134 (1.5%) of the respondents in agreement.

Comparing reasons why some don't attend meetings, lack of time, cultural barriers and involvement in household chores were cited by 5/18 of women interviewed while none of the two men who failed to attend the meetings cited this. These results are seen in the table below

Table 4.5 Reasons for not attending meetings.

	Reason	No male	female
a.	Luck of time	1	6
b.	Cultural barriers	0	5
c.	Involved in other household chores	0	5
d.	None	1	2
Total		**2**	**18**

On asking the respondents whether women hold management positions on project committees only 4/20 (20%) of the women who are on committees, hold positions. It was also observed that those women hold positions like secretaries and assistants while men hold the very top positions like managers, treasurers' e.t.c The respondents gave the following as reasons why they don't hold those top positions in the managements of water supply.

Table 4.6 below depicts reasons for not attending meetings

Reason	Frequency	Percentage%
Culture & traditions	45	33.7
Illiteracy	30	22.6
Lack of time	39	29.5
Poverty	20	14.2

Fig 2.0 reasons for not attending meetings.

4.3.2 Culture and traditions

The table below shows the responses on the role of men and women in this community and how culture has influenced these roles.

Table 4.7 culture and traditions responses.

Role	Agree	%	Disagree	%
a It's the women who mostly carry water	110	82.08	24	24
b. Women head water committees	6	4.47	128	95.5
c. Women decide where water points are situated in homes.	15	11.19	119	88.8
d. Women are allowed to sit under project committees	84	62.68	50	37.3
e. High commitment of women on committees	8	10.72	126	94.0

From the above table it was observed that most women are the ones who mostly carry water from various water points to their homes. Most of them noted that culture in this community

does not allow the male counterparts to carry water since it is the work of women. Out of the 134 respondents, 110 (82.02%) agreed while 24(17.4%) disagreed to this.

On whether women head project committees, only 6 (4.5%) out of 134 respondents agreed while 128 (95.5%) out of 134 disagreed. The reasons given are that culture does not allow a woman to head men in any grouping.

Table 4.8 below indicates that only 15/134 (11.19%) of the respondents agreed that women decide where the water points are situated in the home while 119/134 (88.81%) disagreed. This shows that they are not involved in such decisions even in there own homes.

Table 4.8

Q.		Strongly agree(% of sample space 134)	Strongly Disagree(% of sample space 134)
a.	Women are well represented in water supply decisions	**7.46**	**92.54**
b.	Women are actively involved in construction of water points	**11.19**	**88.81**
c.	Women own water points like bore holes, wells	**5.97**	**94.02**
d.	Women are in charge of water points in the area	**1.49**	**98.51**
e.	Women hold managerial positions on the committees	**22.38**	**76.12**

Only 8/134 of respondents agreed that there is a high commitment of women on committees. This was attributed to culture and traditions that is biased against women.

4.3.3 Illiteracy

Table 4.9 below shows the levels of education for the respondents.

Level of Education	Male	Female
Primary	16.42	34.33
College university	5.9	7.46
None	7.46	11.9

Out of 134 respondents 22 men dropped at primary school level while for their female counterparts, 46 out of 134 respondents learned up to the same level (primary)

18 out of 134 men learned up to secondary level while 10 out of 134 women dropped at the same level. As you go higher the education ladder the women reduce in number 8 men out of 134 respondents who were interviewed reached college/university while only 4 women reached at that level.

At the same time 10 men never went to school while 16 women responded not to have gone to school also.

It was also noted that out of 134 respondents only 26 people can read and write this is only 19.4%, of 134 This indicates a high level of illiteracy. Out of these respondents 10 are women while 16 are men 44/134 are able to make and answer a phone call. of which 32 are men while 22 are women.

This research also revealed that none of the respondents have received training in water pump repair. Only 10 men out of 134 respondents have trained in maintenance of water machines while no woman again has undergone such training.

5 People out of the 134 respondents have trained in organizing women groups to manage water systems. This is only 4.48% of which 3 are men (2%) while 2 (1.4%) are women. These points out a very small number of women having in water supply matters. Measures have to be taken by increasing by increasing the number of women to undergo training as far as water supply is concerned. Out of the 134 respondents 4 indicated that women use computers to access internet enabling them to access internet enabling them to exchange knowledge, idea and experience in water supply. Out of 4 only 1 is a woman.

In this case it can be concluded that the levels of education for women is very low, very few have undergone training in water supply and this explains the reason why very few of the women take part in water supply decision making.

Table 4.9 Education and training in water supply

Question		Male	female
a.	I can read and write	16	10
b.	I can make and answer a phone call	32	22
c.	I have attended training in:		
	i) water Pump repair	0	0
	ii) maintenance of machines	10	0
	iii) organizing women groups to manage water systems	4	2
d.	Water training has improved participation of women groups	3	2
e.	Women use computers to access internet enabling them to exchange		

knowledge, ideas and experiences	3	1

4.3.4 Poverty/economic constraints.

This study found out that 18 men out of 134 are business men while 12 are women. Housewives are 26 and only 6 women are employed by the government. On the same note 16 men are employed by the government.

This reveals a high level of economic constraint whereby women recorded low participation in various occupations.

On evaluating their monthly incomes, the following were the results: 86/134 respondents earned an income below Ksh. 5,000 per month with 32 (23.88%) being men and 54 (40.28) being women. Between Ksh. 5,000 and 10,000) only 27/134 respondents earn this income. This constitutes 18 (13.4%) men and 9 (6.7%) women. 12/134 respondents earn between ksh.11, 000 – Ksh. 20,000 of which 8 (5.9%) are men while 4(2.98%) are women. Only 7 men earn above Ksh 21,000 while this is only earned by 2 women.

Monthly income (Kshs)	male%	female%	totals%
Below 5,000	23.88	40.28	64.2
5,000-10,000	13.4	6.7	20.1
11,000-20,000	5.9	2.95	8.9
Above 21,000	6.22	1.49	7.7

Table 4.10 Poverty/economic constraints.

The above table points out high levels of economic constraints in women than men. As the amount earned increases the number of women reduces. 112 Respondents commended that this

income levels of women have a greater influence on the way they participate in water supply decisions. It means that because of these constraints, women engage in other activities generating money to rise up their families hence having no time to participate in water supply decisions and management.

About the modes of communication as one of the indicators of poverty the table below shows how this is distributed among men and women.

Table 4.11 Modes of communication

Mode	**Frequency (No of users)**		**Total**
	Male	Female	
Cell phone	50	32	82
Letters	16	8	24
None	8	20	28
Total	74	60	134

From this table, it's quite clear that only 32 women out of 134 respondents use cell phone while men who use cell phones are 50. 16 men use letters. 20 women do not use any of the above compared to their 8 male counterparts.

On whether the respondents are involved in local commercial enterprise 30/134 (22.4%) said they were involved while 104/134 (77.6%) were not involved.

Table 4.12 distribution of local commercial enterprises for men and women

Category	**Male**	**Female**
Kiosk	8	3

SHOP	6	2
Juakali Industries	6	2
Industries	0	0
None	1	2

Out of 30 respondents who are involved in local commercial enterprises, 11 own kiosks of which 3 are female and 8 males. Shops are owned by 6 men and 2 women Juakali industry owned by 6 men and 2 women. None of the respondents have an industry while 3 people were not involved in any enterprise.

118/134 (88.06%) agreed to the fact that the involvement of women in the local commercial enterprise was very low. They attributed this to poverty have the reasons why many women have to walk for long dustless looking for water since they cannot afford their own water points or afford to bring piped water in their homes. This makes them busy always hence no time to attend to meetings concerning water supply.

4.3.5 Distance and time to water points

On asking respondents the average distance women walk to their sources of water. The following table summarizes the results.

Table 5.3 Distance to water sources

Distance	Frequency	Percentage (%)
0-2	120	89.6
3-5	14	10.4
6-9	0	0.0
More than 10	0	0.0

From the frequency table above 120/134 respondents fetch the water from water points that are between 0-2 km away. This is 89.55% while 14 people fetch their water from 3-5 km away. None of the respondents fetch hi/her water further than 5km.

On asking the respondents how long they take to reach their sources of water and back home, these were the results.

Table 4.13 time taken to water points

Time taken (in mins)	Frequency	% Frequency
0 – 20	22	16.4
21 – 40	24	17.9
41 – 60	56	41.8

From the above frequency table, out of 134 respondents that were asked about this question its clearly indicated that only 16.4% people get their water in between 0-20 minutes time, 17.9% take 21 – 40 minutes, while 25.8% take 41 – 60 and the majority who are 41.8% take more than one hour.

The reasons given because of this distance and time taken to fetch this water are:

Most respondents feel that there is no piped water in there households, the routes to the rivers are very bad so people don't use other means to transport water apart from using majority of women who carry this water mostly on their heads. The table below summarizes this information

Table 4.13 mode of transport to water points

Mode of transport	Frequency %
Animal	5
Bicycles	20

Vehicles	1
Women	74

From this table women take the major section of carrying water hence most of their time is spend on carrying water: Since they take 74%, then it's also quite clear that they also take longer distances looking for water. To help these women, most respondents felt that the people of Kimilili district should get an equal distribution of piped water in town as well as in villages (rural) in their homes order to save them this time

4.4 Discussion of the findings

From the demographic information it's clear that gender balance does not exist in the water supply sector. This is a bad demonstration to the community and to the women. Only 33.3% of women are represented in decision making out of 100%. This means most of the decisions made in the water supply is made by men (67%).

Most of the respondents did not have good professional qualifications (training) in the water supply. Only 2/134 women respondents have taken training in organizing women groups to manage water systems. None of the women has received training in either water pump repair or maintenance of water machines. The trained women are only 1.49% of the total number of respondents. This calls for women to be encouraged and go for this training in order to improve their participation in the water supply sector.

On location and distribution of water, more people who received piped water were in town while people in rural areas had to walk for long distances looking for water. This takes most of the time especially for women who culturally are the ones to carry water on their heads.

4.4.1Culture and traditions

Culturally women in Kimilili district are the ones supposed to carry water on the heads. 110/134 respondents (82.08%) agreed to this. Only 4% head water committees and the rest is left for men because culture does not allow them to head men especially in the rural areas. 88.8% of the respondents agreed to the fact that women do not make any decisions as far as water supply

is concerned. The women are allowed to attend meetings but not to have equal say with as the men.

4.4.2 Illiteracy

Most women drop school at primary level 34.3% as compare to the male counterparts who are only 16.4%. Only 7.46% of the women go up to secondary school level, 2.98% to college and university level while 11.94% never goes to school. Furthermore only 1.49% women are trained in matters concerning water supply. These is there a serious challenge in Kimilili District whereby women have to be encouraged to undergo training in water supply matters in order to take part in decision making.

4.4.3 Poverty/ economic constraints

From the monthly income table it can be deduced that a high percentage of women (40.29%) have an income of below Ksh. 5000 as compared to the male counterparts who only 23.8% earn the same amount. About those who earn over Ksh. 21,000 we only have 1.49% women while men are well represented forming 5.22%. Very few women are employed by the government representing 4.47% of the women while men who are employed are 11.9%.

Women also engage in low income generating businesses e g kiosks which only earn them very little for supporting their families. This therefore keeps them busy all the time trying to make ends meet as their male counterparts participate in decision making concerning water supply matters.

4.4.4 Distance and time to water points.

From this research it was observed that its women who mostly carry water on the heads together with children who are girls, (92%) of the respondents agreed to this.

The distance this women take is most between (0-2)km (99.6%) of respondents agreed with this while (10.4%) says they fetch water from (3-5)km away. However there is an indicator that Kimilili has water which is well distributed in the district since name of the respondents fetches water from over 5km away. It was also found out that these women who carry water take up to 1 hour on the way i.e. to and from the water points.

This is precious time that could have been used for attending to serious issues like decision making in the water supply water from over 5km away. It was also found out that these women who carry water take up to 1hour on the way i.e. to and from the water points.

This is precious time that could have been taken for attending to serious issues like decision making in the water supply.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECCOMENDATION.

5.0 Introduction

This chapter presents the summary of the study and recommendations

Based on the conclusions.

5.1 summary of the study:

The study had four objectives:: to establish the influence of culture and traditions on water supply management and decision- making among women in Kimilili-Bungoma district, identify the relationship between illiteracy and women's participation in water supply decision, assess the influence of poverty levels of women on decisions on water supply in Kimilili-Bungoma district and to establish the relationship between the distance women walk to water sources and time taken and the basis of decisions concerning water supply decisions in Kimilili-Bungoma district.

5.1.1 Participation of women in water supply.

The studies revealed that majority of women do not participate in decision making in the water supply sector. The ratio of men to women in management (committees) is 40:20 i.e. 2:1 The makes participation of women in water in water supply difficult.

5.1.2 Culture and traditions

There is low commitment of women in participation in the water supply decisions because the culture of Kimilili and traditions does not allow women to make decisions even in their own homes. Its men who have a say in all the matters concerning families and communities

5.1.3 Illiteracy

Most women do not go up to a higher level if learning as compared to men .None of the women have trained in water supply management apart from 1.49% women who have trained in organizing women groups to manage water systems there is therefore need to sensitize women on water supply matters in order for them to participate in decision making.

5.1.4 Poverty/ Economic Constraints

A high level of economic constraint was recorded in women where by women were engaging in small businesses and low income generating activities. 85.5 5 of the respondents felt that low income levels had a negative influence on women's participation in the water supplies decisions. It hinders them from participating since they are ever busy looking for income to take care of their families.

5. 1.5 Distance and Time Taken

It was deduced that its women who mostly carry water from various water points. This takes most of their time they have to make several trips to fetch water in a day. This time would have been used to attend to meeting s and trainings concerning to water supply.

5.2 Conclusion

Based on the findings of the study, a number of conclusions were drawn. Women have minimal participation in water supply decisions, the worst factors influencing this include culture and traditions, economic constraints and how education backgrounds and lack of training in water management.

However distance and time has minimal influence on women's participation in the water supply decisions since water is well distributed all over the district making women not to walk long distance fetching water

5.3 Recommendations

From the findings of the study the following recommendations are suggested: People to be sensitized about equal rights for men and women, improve economic status of women e.g. by giving them loans to improve in their business, training of women in water supply management and increase the number of piped water projects so that every household receives water to reduce distance that they walk to various water points.

5.5 Suggestions for Further Research

Research needs to be done on gender and training in water supply and management in Kimilili-Bungoma district.

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APPENDICES

Appendix 1: Letter of introduction

University of Nairobi

P.o. Box

Nairobi.

1/05/010

To the respondent,

I am a postgraduate student in the department of extra – mural studies pursuing a Masters degree in Project Planning and Management from the University of Nairobi. I am carrying out a research on the participation of women in water supply decision in Kimilili Bungoma district. I therefore wish to request for your consent to be enlisted as one of the respondents. If you accept my request, please answer the questions provided by putting a tick ( ) where appropriate.

I wish to assure you that the responses and the information you provide will be treated very confidentially and used for the purpose of this research only. In case you have any additional information not sought for in this questionnaire, put it down in the blank spaces at the back of each page. Do not disclose your identity.

Thanking you in advance

Yours Faithfully,

Musungu N. Stella.

APPENDIX 2: QUESTIONNAIRE

Factors influencing Women's participation in Water Supply decisions in Kenya. A case of Kimilili-Bungoma District.

Introduction: This questionnaire is about the factors influencing women's participation in water supply decisions. Kindly respond to all questions. Tick within (√) brackets provided to indicate your choice and in case there are no choices, answer as appropriate.

Please do not write your name anywhere on this questionnaire

Section A: Participation in water supply decisions by:

1. State your gender M ( ) F ( )
2. Name of division _____
3. Name of water point _____
4. Nature of water project that serves you
   a) Well ( )
   b) Borehole ( )
   c) Dam ( )
   d) Cement tank ( )
   e) Protected springs ( )
   f) Piped water ( )
5. Are you a member of the water project committee? YES ( ) NO ( )

6. (a) Give the number of the committee members in terms of gender?

   1-3( )

4-6 ( )

7-10 ( )

Above 10 ( )

(b). How often do you hold committee meetings

Monthly ( )

¼ yearly ( )

½ yearly ( )

Yearly ( )

7 In this section tick (√) the most appropriate response for each of the questions below. **Strongly agreed (5), Agree (4), Not sure (3), Disagree (2), Strongly disagree (1)**

Q.		Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
a.	I attend all the meetings					
b.	Women are well represented in water supply decisions					
c.	Women are actively involved in construction of water points					
d.	Women own water points like bore holes, wells					
e.	Women are in charge of water points in the area					
f.	Women hold managerial positions on the committees					

13. (a)If you do not attend the meetings in 7(a) above, give reasons by ticking appropriately.

CODE	REASONS	(√)
1.	Lack of time	( )
2.	Cultural barriers	( )
3.	Involved in other household chores	( )
4.	Not allowed by husband	( )
5.	All of the above	( )

(b) I do no hold any position in the committee because of the following reason(s)

CODE	REASON	(√) APPROPRIATELY
1.	Cultural/ traditional barriers	
2.	Low education background	
3.	Illiteracy	
4.	All of the above	
5.	None of the above	

14. The water points are owned by

CODE	OWNER	(√)
1.	Community	
2.	Local Development Project	
3.	Individual	
4.	Non-Governmental Organizations	

15. In your opinion please give suggestions on what should be done in order to have equal representation of men and women in water supply decisions

.....

.....

.....

.....

SECTION B: Culture and Traditions.

16. Identify the role of men and women in this community as far as water supply is concerned In this section tick (√) the most appropriate response for each of the questions below. **Strongly agreed (5), Agree (4), Not sure (3), Disagree (2), Strongly disagree (1)**

Q.		Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
a.	It is the women who carry water from water points					
b.	Women head water committees					

c.	Women decide where the water points are situated in the home.					
d	Women are allowed to sit under project committees					
e	There's a high commitment of women on committees					

SECTION C: Illiteracy

17. State your level of education

Code	Level	Tick (√)
(1)	Primary	
(2)	Secondary	
(3)	College/ University	
(4)	None	

18. In this section tick (√) the most appropriate response for each of the questions below.
Yes (3), Not sure (2), No (1)

Q.		Yes	Not sure	No
a.	I can read and write			
b.	I can make and answer a phone call			
c.	I have attended training in: i)water Pump repair			
	ii)maintenance of machines			
	iii)organizing women groups to manage water systems			

d.	Water training has improved participation of women groups			
e.	Women use computers to access internet enabling them to exchange knowledge, ideas and experiences			

SECTION D: Poverty/ Economic constraints

19. i) State your occupation

Code	Occupation	Tick (√)
(1)	Farmer	
(2)	Business	
(3)	House wife	
(4)	Government employed	

ii) Monthly income

Code	Income (Ksh.)	Tick (√)
(1)	Below 5,000	
(2)	5,000 - 10,000	
(3)	11,000 - 20,000	
(4)	Above 21, 000	

20. Do you think income levels influence the involvement of women in water supply decisions?
Yes ( ) No ( )

ii) Explain your response in (20) above
.....
.....
.....

21) Which mode of communication do you use?

Code	Mode	(√)
(3)	Cell phone	
(2)	Letter	
(1)	None	

22. i) Are you involved in any local commercial enterprise?
Yes ( ) No ( )

ii) If the response in 22(i) above is Yes, state the category of the enterprise

Code	Category	Tick ( )
(1)	Kiosk	
(2)	Shop	
(3)	Jua Kali Industry	
(4)	Industry	
(5)	None	

iii) In your own view how can you rate the involvement of women in local commercial enterprise?

Code	Rate	Tick ( )
(1)	Very High	
(2)	High	
(3)	Low	
(4)	None	

SECTION E: Distance and Time to water points

23. i) Source of water for drinking and using in your household.

Code	Source	Tick (√)
(1)	Wells	
(2)	Dams	
(3)	Protected springs	
(4)	Water tanks	
(5)	Boreholes	
(6)	Piped water	

ii) How far is your source of water from your home?

Code	Distance in (km)	Tick ( )
(1)	0 – 2 km	
(2)	3 – 5 km	
(3)	6- 10 km	
(4)	More than 10 km	

24. i) How long do you take to reach the source of water and back to your home?
Less than 30 minutes ( ) 31-40 minutes ( ) 41-60 minutes ( ) More than 1 hour

25. Who carries the water form the source to the homes?

Code		Tick ( )
(1)	Mostly men / boys	
(2)	Mostly women/ Girls	
(3)	Mostly children	
(4)	None of the above	

26. Other modes of transporting water

a) Animals transport

b) Bicycle

c) Vehicles

d) All

27. What do you think should be done in order to reduce the time and distance women spend in collecting water from its source?

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.....

APPENDIX III: INTERVIEW SCHEDULE

Factors influencing Women's participation in Water Supply decisions in Kenya. A case of Kimilili - Bungoma district.

Introduction : This interview schedule is about the factors influencing women's participation in water supply decisions. Kindly respond to all questions.

Section A: Women's Participation in water supply decisions by:

1 Gender M( ) F ( )
2 Sub - location (name) _____
3 Name of water point _____
4 Nature of water project that serves you
   a. Permanent river ( )
   b. Well ( )
   c. Borehole ( )
   d. Dam ( )
   e. Cement tank ( )
   f. Protected springs ( )
   g. Piped water ( )

5. Are you a member of the water project committee YES ( ) NO ( )
6. What is the composition of the committee?
   - No. of men ( )
   - No. of women ( )

(b). How often do you hold committee meetings?
(C) Do you attend all the meetings?

If you do not in (6c) above give any reason why.

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

7 i. Do you hold any position on the committee? YES ( ) NO ( )
If the answer above is" yes " what is your position?

ii. If your answer above is "no", what reason do you have for not holding any top position?

CODE	REASON	TICK APPRIOPRIATELY
1.	Cultural/ traditional barriers	
2.	Low education background	
3.	Illiteracy	
4.	All of the above	
5.	None of the above	

iii. Give any other reason not stated above.

.....
.....

8 i. Who is in charge of the maintenance of the water point in this area?
.....
.....
.....
.....

ii. State his/her gender
Male ( ) Female ( )

9i. Were you involved in the construction of this water point?
YES ( ) NO ( )

ii. If the response above is 'No' in your own views give reasons why?
.....
.....
.....
.....
.....

SECTION B: Culture and Traditions.

10. Identify the role of men and women in this community as far as water supply is concerned ..

11. Are women allowed to sit under project committees?
Yes ( ) No ( )

ii) If the answer above is No. Give reasons.

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

12. i) Who decides on the location / site of water point (borehole, well, water tank etc.) in the home? Husband or wife?

ii) What reason do you have for the answer you have given in 17(i) above?

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

13. How have the people of this community used modern technology to improve water supply in this area?

14.. (i) In your own opinion do you think culture and traditions has influenced the participation of women in water supply decisions?
Yes ( ) No ( )

SECTION C: Illiteracy

15) Can you read and write?

iii) Are you able to make a phone call?

16. i) Did you attend school?

Yes ( ) No ( )

ii) Level of education.....

17 i) Have you attended any training as far as water supply is concerned?

Yes ( ) No ( )

ii) Have you received training in. (tick appropriately)

a) Water pump repair ( )
b) Maintenance ( )
c) Organizing women groups to manage village water system ( )

iii) Has the training you received helped women in this area to participate in water supply decisions?

Yes ( ) No ( )

18 i) Have women in this area been trained to use computers and internet to promote their access to the networks that will enable then to exchange the knowledge, ideas and experiences?

Yes ( ) No ( )

ii)Has this helped women to participate more in the water supply decisions?

Yes ( ) No ( )

SECTION D: Poverty/ Economic constraints

. 19i) Occupation

Code	Occupation	Tick ( )
(1)	Farmer	
(2)	Business	
(3)	House wife	
(4)	Government employed	

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

Do you think income

levels influence the involvement of women in water supply decisions? Yes ( )
No ( )

ii) Explain your response above in (20 i)

.....

.....

.....

21 i) Are you involved in any local commercial enterprise?

Yes ( ) No ( )

ii) State the type of the enterprise.

iii)

SECTION E: Distance and Time to water points.

21. i)What is the Source of water for drinking and using in your household?

ii) How far is your source of water from your home?

22i) How long do you take to reach the source of water and back to your home?

Below 30 minutes ( ) 31-40 ( ) 41 1hour ( ) Above 1 hour

ii) In your own opinion, do you think distance and time taken to water points influence women's participation in the water supply decisions?

.....

.....

.....

23i). Who carries the water from the source to the homes?

ii) Give reasons for your answer above (in 23(i))

a.....

b.....

c.....

d.....

24. What do you think should be done in order to reduce the time and distance women spend in collecting water from its source?

.....

.....

.....

.....

APPENDIX 4: BUDGET

BUDGET ESTIMATE

1 Preliminary survey	
a) Return fare q@ Ksh. 200	Ksh. 800
b) Food in @ Ksh.300	– Ksh.1200
c) Miscellaneous (Stationery e.t.c.)	– Ksh. 500
	Ksh.2500
2. Cost of developing instruments for:	
a) Pretesting (50 instruments @ 4 pages	=Ksh.400
b) Actual research (100 instruments @ 4 pages)	=Ksh.800
	Ksh.1200
3. Cost of training 4 research assistant for 1 day:	
a) @ meal Ksh.300	=Ksh.1200
b) Fare @ Ksh. 100	Ksh. 400
	Ksh. 1800
4. Pretesting instruments in the field	
Fare for 5 people @ Ksh.100 for 4 days	=Ksh.2000
Meals for 5 people @ Ksh.200 for 4 days	–Ksh.4000
	Ksh.6000
5. Cost of data collection, analysis and report writing	
Stationery (pens/folders/rulers pencils e.t.c.)	= Ksh.550
Return Fare for 5 people @ Ksh.200 for 12 sub - locations	=Ksh.4000

Meals for 5 people @ Ksh.300 for 12 sub - locations =Ksh.6000

Duty allowances for 5 people; 14 days @ Ksh. 250 =Ksh.17500

Data analysis using computer packages;

2 hours daily (2weeks) Ksh 1/a minute =Ksh.1680

Report writing using computer (approximately 1wk) = Ksh.1200

Ksh.30, 430

TOTAL COST OF THE PROJECT =Ksh.41930

APPENDIX 5; TIME SCHEDULE

ACTIVITY	DURATION
Preliminary survey of relevant agencies/partners in Kimilili - Bungoma district	1 week
Developing research instruments, training research assistants and pretesting instruments	2 weeks
Resource mobilization: stationery, camera, fare, accommodation, food, and miscellaneous	1 week
Actual data collection	2 weeks
Data coding and analysis	2 week
Report writing and presentation	1 week