

**INFLUENCE OF WATER RESOURCE USERS ASSOCIATION
LEADERSHIP COMPETENCIES ON WATER RESOURCES
MANAGEMENT: A CASE OF MOUNT KENYA REGION**

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**A Research Project Report Submitted in Partial fulfillment of the Requirements
of the award of the Degree of Master of Arts in Project Planning and Management
of the University of Nairobi**

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DECLARATION

I declare that this research project report is my own original work that has not been submitted for any academic award in any other university.

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DEDICATION

To my beloved wife, Zipporah Kerubo Monene; her encouragement and overwhelming support has been source of my inspiration. To my dear children; Sammy, Hillary, Steve, and Esther; they are everything to me. To my late dad, Mr. Charles Isaboke Otara; who worked hard in supporting my education and laid the foundation of life upon which I stand today. To my mother, Mrs. Esther Nyaboke Isaboke; who prayed and God listened; her tireless efforts have yielded fruits.

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LIST OF ABBREVIATIONS AND ACRONYMS

AG	-	Attorney General
CBOs	-	Community-Based Organizations
CDD	-	Community Driven Development
CEML	-	British Council for Excellence in Management and Leadership
DC	-	Development Centers
DFES	-	British Department for Education and Skills
DSDO	-	District Social Development Officer
FGD	-	Focus Group Discussion
GDP	-	Gross Domestic Product
GOK	-	Government of Kenya
IMF	-	International Monetary Fund
IWRM	-	Integrated Water Resources Management
MOU	-	Memorandum of Understanding
MPPM	-	Masters in Project Planning and Management (MPPM)
MEWNR	-	Ministry of Environment, Water and Natural Resources
NGOS	-	Non-Governmental Organizations
NRM	-	Natural Resource Management
PAD	-	Project Appraisal Document
PIP	-	Project Implementation Plan
SCMPS	-	Sub-Catchment Management Plan
SCS	-	Senior Civil Service
SES	-	Senior Executive Service
UN	-	United Nations
UON	-	University of Nairobi
WB	-	The World Bank
WDC	-	WRUA Development Cycle
WRMA	-	Water Resources Management Authority
WRUA	-	Water Resources Users Association

ABSTRACT

This study took place in Mount Kenya region covering counties of Nyeri, Kirinyaga, Embu and Muranga in Kenya. The region is of great economic, social and environmental importance to the nation because of its rich agricultural production, source of water for the city of Nairobi and source of water to Mazinga and Kaburu dams that generate over 65% of hydro power to the country. The main objective of the study was to assess the Water Resource Users Association leadership competency in managing water resources focusing on their strategic leadership skills, interpersonal skills, project management skills and financial resources management capacity. Out of the targeted 150 WRUA leaders, 137 responded at 91.3% making the results reliable. The researcher used interviews and questionnaires techniques to collect data which was analyzed by using SPSS package. The study established that: 1) the WRUA leadership is comprised of 72.3% men and 27.7% female, 2) 90% of the WRUA leadership is above 40 years of age, 3) 86.1% of the WRUA leadership had the necessary level of school education, training and the necessary experience for water resources management, 4) 68.6% of the WRUAs are lacking sufficient funds for their operations, 5) 62% of the WRUA leadership experienced water related conflicts in the past 12 months, 6) majority of WRUA leadership were involved in the implementation of several projects in the last 12 months, and 7) majority of WRUA leadership have not been trained on key financial management topics and they lack financial management systems and sufficient financial resources making water resources management difficult. Based on the findings of this research, it is recommended governments (National and County) and other stakeholders: establish a sustainable financing mechanism for WRUA operations and water resources conservation and management, review the mandate of WRUAs to tackle institutional and operational weaknesses and facilitate the development of WRUA operations manual to clearly define how WRUAs will operate and achieve their objectives. The study revealed that the Mount Kenya region WRUAs have succeeded in bringing together community members and different stakeholders to focus on water resources management. The WRUA leadership had the necessary strategic leadership skills and project management skills that has influenced water resources management positively. On the other hand, lack of the necessary interpersonal skills and limited financial resources management skills has made water resources management difficult. The situation demands technical support and capacity building of the WRUA leadership to ensure proper management, conservation, utilization and regulation of water resources in often very innovative ways. This will lead to effective water resources management, which is crucial for Kenya's sustainable economic growth and poverty reduction.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Water resources management issues have become so pressing that the World Economic Forum named water as one of its top challenges two years in a row, in 2013 and 2014. Within this changing physical and socio-economic landscape, water practices of the past are no longer adequate. Countries cannot grow sustainably, or strengthen their resilience to climate change, without smart water management that takes into account decreasing water availability and quality, and the need for deliberative allocation based on social, environmental, and economic needs. At least 2.5 billion and 768 million people in the world remain without access to improved sanitation and water, respectively. Providing these services sustainably requires integrated planning and management, including securing a quality water supply (World Bank/Edwin Huffman, 2014).

Effective water resources development is widely recognized as crucial for sustainable economic growth and poverty reduction in developing countries (World Bank 2004; Grey and Sadoff 2006). However, such development incurs costs as well as benefits. Consequently, great care is needed in the planning and management of water resources development. In order to maximize benefits and minimize costs, it is essential that decision-making incorporates different stakeholder perspectives and is based on informed assessments of the trade-offs associated with allocation of water resources between competing needs (McCartney and Awulachew, 2006).

In Asia, Africa and Latin America, water related conflict-resolution mechanisms often exist only in the form of documents, regulations etc. and are not implemented to the letter in everyday interactions. Consequently in practice they are either neglected or simply do not work. In many cases the strongest, the quickest, the most impertinent (but well connected) users gain better access to water resources. This is non-sustainable. Disappointing performance of government owned and operated irrigation systems compelled a number of countries to transfer rights and responsibilities for management of irrigation systems from government agencies to private or local persons or organizations. (UNESCO, Bangkok, 2011).

The widespread trend to transfer irrigation management responsibility from the state to “communities” or local user groups has by and large ignored the implications of intra-Community power differences for the effectiveness and equity of water management. Gender is a recurrent source of such differences. Despite the rhetoric on women’s participation, a review of evidence from South Asia shows that female

participation is minimal in water users' organizations (International Food Policy Research Institute, 1998).

More than half of world's poor depend heavily on natural resources for their livelihoods, thus there is a need to find new natural resource management approaches for secured and enhanced livelihood. An example has been the efforts in Nepal over the last 20 years placed on development of Water Users Group (WUG) for managing irrigation systems, and Forest Users Group (FUG). Both irrigation and forestry sectors have claimed at least partial success in these approaches for community-based management approaches (Pant, D.; Thapa, S.; Singh, A.; Bhattarai, M.; Molden, D. 2005).

The water resources of Brazil are subjected to pollution and mismanagement and susceptible to urban flooding and land-slides. The government increased funding to the National Water Agency to address several aspects important for IWRM. River basin committees were established, but arose some conflict of interest between committees where rivers flow through several States, since decisions taken by upstream committees can conflict with the aims of committees downstream. Progress has been slow but steady, and could well continue (TUCCI, C.E.M., 2003).

South Africa is facing a number of challenges regarding water resources management. Almost everyone is affected by mismanagement of water resources. Hence those living in poor areas are the most affected as they do not have access to potable water and proper sanitation. Many policy-makers, researchers, and water managers advocate that water must be managed at the level of river basins, based on the argument that river basins are a "natural" unit and thus the logical unit for water management (Africa Water Journal; December 2011).

The Pangani Basin is one of the most productive areas of Tanzania with nationally important agricultural outputs, (almost 90% of the surface flow in the Pangani river basin is used for irrigation) and hydropower generation. In addition, the basin has forest and biodiversity resources of global importance. Despite available water resources, Pangani Basin is water stressed having less than 1,200 cubic meters of water per person per year and already inadequate supplies threaten the basin's natural resources, livelihoods, agricultural and hydroelectric productivity. Many conflicts are emerging among water user groups – between upstream and downstream water users, farmers and pastoralists, small-scale and large scale water users, etc. (Pangani River Basin Management Project report, 2010).

Kenya is a water scarce country with surface water coverage of only 2 percent, registering a water scarce category of 647m³ per capita against the global benchmark of 10000m³. In 2002, the Kenyan government launched an ambitious programme of reforms for the water sector, acknowledged to be one of the most advanced and comprehensive in Africa. The enactment of the Water Act 2002 was meant to provide for the proper management, conservation, use and control of water resources, acquisition and regulation of rights to use water and regulation and management of water supply and sewerage services but far from being realized. In Kenya today, the demand for water has increased with increased population. As we deal with unfavorable geographical distributions, we have to deal with a number of natural threats as well as many serious human threats. The study findings could lead to better managed and sustainable WRUAs and improve policy formulation with regard to management of water resources.

1.2 Statement of the Problem

This study assessed the competency of WRUA leadership in managing water resources; the case of Mount Kenya region. Water scarcity, which can broadly be understood as the lack of access to adequate quantities of water for human and environmental uses, is increasingly being recognized in many countries as a serious and growing concern (White, C., 2012). There are about 40 million people living in Kenya, of which about 17 million (43 percent) do not have access to clean water. For decades, water scarcity has been a major issue in Kenya, caused mainly by years of recurrent droughts, poor management of water supply, contamination of the available water, and a sharp increase in water demand due to relatively high population growth. The shortage has been amplified by the government's lack of investment in water, especially in rural areas (World Bank, 2010). Kenya's economy is highly vulnerable to water availability (Wafula, 2010). In the more recent years due to the worsened water situation, the focus of Kenya's water crisis has shifted to the impact of climate change and climate variability (Mogaka, Gichere, Davis and Hirji, 2006). But water mismanagement and deforestation are rapidly destroying water catchment areas and water scarcity is reaching worrying levels.

From the literature review done the researcher discovered knowledge gaps that this research is contributing to. The knowledge gaps included: lack of strategies for developing and investing in water resources management, lack of information on WRUAs leadership performance; lack of information on key competencies of WRUA leaders, lack of reports on WRUA activities, lack of information on sources of WRUA funding and what competencies exist.

1.3 Purpose of the Study

The purpose of this study is to determine competency factors of WRUA leadership that influence the management of water resources.

1.4 Research Objectives

The study was guided by the following research objectives:

- a) To establish how strategic leadership skills of the WRUA leaders influence the management of water resources in Mount Kenya region.
- b) To establish how people management skills of the WRUA leaders influence the management of water resources in Mount Kenya region.
- c) To explore how project management skills of the WRUA leaders influence the management of water resources in Mount Kenya region.
- d) To investigate how financial resources management capacity of the WRUA leaders influence the management of water resources in Mount Kenya region.

1.5 Research Questions

The study sought to answer the following questions:

- a) How do leadership skills of the WRUA leaders influence the management of water resources in Mount Kenya region?
- b) In what way do people management skills of the WRUA leaders influence the management of water resources in Mount Kenya region?
- c) How do project management skills of the WRUA leaders influence the management of water resources in Mount Kenya region?
- d) How does financial resources management capacity of the WRUA leaders influence the management of water resources in Mount Kenya region?

1.6 Significance of the Study

This study brought out the need for capacity building of WRUA leadership to improve their competency in water resources conservation and management. Whereas great attention has been made in looking at governance with respect to governments and public companies, little effort has been directed towards WRUAs. The findings from the study are expected to benefit a number of stakeholders. Donors may identify critical areas for supporting WRUA operations. Planners or Policy makers may use the

information to formulate relevant policies and guidelines in water resource management. Government agencies may use the results to identify areas for policy, planning and practices review and development. Researchers may conduct further research to: develop community financing model for water resources conservation and management, determine the issues constraining the performance of government agencies responsible for enforcing water rules and regulations and give appropriate recommendations and conduct a comparative research to identify the major factors that hinder women and youth's participation and control over water resources in Kenya. The study findings, has also added more knowledge for the benefit of future researchers in this sector. Finally WRUAs and communities may be encouraged by the results to be actively involved in water resources management activities in their sub-catchment areas by helping the government agencies to identify issues that need strengthening and working on. The WRUAs may also identify comprehensive and inclusive competencies to be developed and training needs for donors and water sector players to support.

1.7 Delimitation of the Study

This study took place in Mount Kenya region covering four counties of Nyeri, Kirinyaga, Embu and Muranga in Kenya. The study was restricted to one hundred and fifty (150) WRUA leaders from 50 catchment areas of Mount Kenya region targeting three (3) top WRUA executive committee members namely the Chair Person, Secretary, and Treasurer. The study also targeted eight (8) key stakeholders working closely with WRUAs including WRMA, Agriculture, Livestock, Gender and Social Services, Fisheries, NEMA, KFS and NIB.

1.8 Limitations of the Study

Time and financial resources were expected to be limiting factors for the study. The researcher was able to reschedule his work and is grateful that WRMA was able to provide logistical support in facilitating the meetings and taking care of the respondents.

1.9 Assumptions of the Study

The researcher identified two assumptions of this study; 1) that the WRUA leaders were willing and available to participate in the study and 2) that there will be no rain during the period of data collection. As can be deduced from Table 4.1, the respondents were available and very cooperative with a questionnaire return rate of 91.3 %.

1.10 Definitions of Significant Terms

The following were the significant terms of the study:

Strategic Leadership Skills	refers to the level of education, leadership training, year and facilitate the development of WRUA operations manual to clearly define how WRUAs will operate and achieve their objectives. Years of leadership experience, leadership competencies, understanding and use of key WRUA documents.
Project Management Skills	refers to number and types of projects implemented, technical capacity to handle projects, training in project management and experiences in project management.
Interpersonal Skills	refers to the experiences of water related conflicts, mechanisms for managing and mitigating conflicts and ways of strengthening relationships with members and stakeholders.
Financial Resources Management Capacity	refers to the financial management skills training, experiences, financial management systems, understanding and use of key financial documents, sources funding, responsibility for handling finances and experienced financial management challenges.
Water Resources Management	refers to the water resources management best practices, Water allocation plans, Sub-catchment management plans and WRUA improvement recommendations.

1.11 Organization of the study

This section presents a perfect broad view of the study in an easy way of understanding chapter by chapter. In Chapter One, the researcher provides detailed information on the background of the study, statement of the problem, purpose of the study and also the research objectives and questions. In Chapter Two, the researcher reviews available literature on the independent and dependent variables from the

global, regional, national and local contexts and presents a conceptual framework. In Chapter Three, the researcher presents in detail the research methodology. In Chapter Four the researcher covers data analysis, presentation and interpretation of the findings. In Chapter Five the researcher presents the summary of key findings, conclusion and key recommendations to the policy makers and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews available literature on key competencies that influence the management of water resources giving analysis and case scenarios from the global, regional and local contexts. The chapter also presents a conceptual framework reflecting the relationship between the identified dependent (water resources management) and independent variables (strategic leadership, project management, people management, and financial management).

2.2 Water Resources Management

Kenya is one of the most water scarce countries in the world. Kenya is ranked 26th out of the scarcest countries of the world. In 1970 Kenya had some 1500 cubic meters of fresh water per person per year. The figure was reduced to approximately 600 cubic meters in 2007. In 2010 it was projected to have fallen to 500 cubic meters per capital per annum. The rising population and historical low investment in water resources, water storage and water services results in the need for considerable infusion of investment (The United Nations World Water Development Report 2; 2006).

The Mount Kenya Catchment area was chosen for this study because of its economic and social importance. The region is a supplier of agriculture, fisheries and livestock products to the main cities (Nairobi, Mombasa, Kisumu) and other main urban centres in Kenya. Mount Kenya was listed as a world heritage site in 1998 and each year a number of tourists visit the area. The vast underground lakes and a large network of rivers supply water to more than three million people in surrounding rural areas as well as to the approximately four million people of the nation's capital city of Nairobi. The water from the catchment area is channeled to Mazinga and Kamburu dams for the generation of the nation's hydro-power. The Mount Kenya Catchment area has undergone intensive environmental degradation resulting in the siltation of rivers, reservoirs and irrigation canals, which in turn exacerbates flooding in the lower parts of the Tana basin (World Bank, PAD 2007). WRUAs with the support of the government and donors plant trees and vegetative ground cover to protect riverbeds and natural springs, and monitor the pollution levels of the rivers (IFAD, 2013). According to SNV Netherlands Development Organization (2010), Nanyuki WRUA is a legally constituted organization registered with the Kenya Registrar of Societies in 2001 and mandated to manage the water resource in the Nanyuki Sub-catchment in collaboration with the WRMA Nanyuki Regional Office. The WRUA is managed by a committee of 14

people drawn from the upper, middle and lower zones of the river. The executive team comprising of the Chairman, Treasurer and Secretary handle the day to day functions of the WRUA with the support of a River Scout (SNV, 2010).

A recent World Bank study showed that in low income countries such as Kenya, natural resources such as water and forests make up a significant share of total wealth and are substantially larger than the share of produced capital. Therefore, sound management of these natural resources can support and sustain the welfare and growth of poor countries, and contribute directly to poverty alleviation among the poorest communities (World Bank PAD, 2007).

Kenya's Vision 2030 aims to transform Kenya into a newly industrializing, "middle-income country providing a high quality life to all its citizens by the year 2030". Kenya's journey towards prosperity also involves the building of a just and cohesive society that enjoys equitable social development in a clean and secure environment. The Kenya vision 2030 for water and sanitation is to ensure that improved water and sanitation are available and accessible to all.

Kenya's Constitution 2010 on the Bill of Rights states that every person has the right to clean and safe water in adequate quantities (chapter 3 section 43.1d). It is the responsibility of WRMA and WRUA leaders to ensure this is achieved. Kenya's endowment of water, forests, and minerals serves as the foundation for much of the country's economic activity, but is vulnerable to natural shocks, mismanagement, and depletion.

According to Rupert Watson (2007) and The Government of Kenya's Water Act (2002) WRUAs fulfill their mandate to act as a fora for conflict resolution and co-operative management of water resources in often very innovative ways. They promote: legal water abstraction, efficient and proper water use; sustainable water use, management and water development, soil and water conservation practices within the River catchment area, conservation of water quality, reasonably sharing of river flow between the environment, wildlife and all the communities relying on Rivers, it provides a forum to discuss, prevent and resolve water use conflicts, and lastly promotes dialogue between water users and GoK in regard to water policy and enforcement of the Water Act in respect of activities relating to Rivers. (The Water Resources Management Rules, 2007).

According to the water rules, Rule 10(6) provides the procedure for registration by completion and submission of Form 18, and Rule 10(5) requires WRMA to maintain a register of WRUAs within each

Catchment Area. In Mount Kenya, the study will focus on 50 catchment areas that have 50 WRUAs. The expectations of a WRUA from WRMA's perspective may be set out in the Memorandum of Understanding which both are empowered to enter into by Rule 10(7). These include:- awareness creation, acting as a bridge between WRMA and water projects, installing measuring devices, ensuring a given water reserve at all times, starting tree nurseries and with assistance from WRMA, disseminate rainwater harvesting techniques, collect revenue, and manage projects and water resources. The WRUA also supplies WRMA with details of its river, catchment area, legal registration, bank account and other relevant information. In furtherance of a two-way relationship WRMA agrees in the Memorandum of understanding to send representatives to WRUA meetings, conduct abstraction surveys, monitor water quality and generally assist the WRUA in revenue collection, proposal writing, project management and water resource management (The Water Resources Management Rules,2007).

The intention of WRUAs is to resolve conflicts over water resources as per the Water Act 2002. In addition, a constitution often envisages that the Association will "provide a forum to discuss, prevent and resolve water use conflicts". The WRUA forum provides an opportunity for grievances to be aired, anger vented and feelings made known. The most obvious conflicts it helps prevent are those ones between pastoral users lower down a water course and agricultural or horticultural extractors in the upper reaches. Being able to bring all users together, and make them more aware of each other's problems and perspectives is one of the most vital roles of any WRUA (The Government of Kenya, Water Act, 2002).

The pattern of water use and land ownership on the slopes of Mount Kenya has changed dramatically over the past 40 years. Since Independence in 1963, many formerly large scale farms have been settled by smallholders. More recently, the area has found considerable favour with horticultural enterprises, and both these factors have resulted in a massive increase in population and so demand for water. Accompanying the population increase has been considerable deforestation with the added consequences of both increasing the area available for settlement and hastening the run-off of rainfall. As pressure on water resources increased, so did the potential for dispute over their apportionment. In some cases conflict became a reality as downstream users found them without water for much of the year and so moved upstream, often with their livestock, ruining crops, and even threatening lives. Wildlife also moved upstream in search of water, with similar results. The formation of water user groups was also aided by the presence of a local water oriented company, Rural Focus Limited, which saw the need long before they were officially recognized by statute (Rupert Watson, 2007).

2.3 Strategic Leadership Skills

Strategic leadership is defined as “the leader’s ability to anticipate, envision, and maintain flexibility and to empower others to create strategic change as necessary” (Hitt, Ireland, & Hoskisson 2007: 375). Strategic leadership is multifunctional, involves managing through others, and helps organizations cope with change that seems to be increasing exponentially in today’s globalised business environment (Huey 1994: 42–50). Strategic leadership requires the ability to accommodate and integrate both the internal and external business environment of the organization, and to manage and engage in complex information processing. Several identifiable actions characterize strategic leadership that positively contributes to effective strategy implementation, namely: determining strategic direction, establishing balanced organizational controls, effectively managing the organization’s resource portfolio, sustaining an effective organizational culture and 11 ethical practices.

Spendlove (2007) asserted, over the past ten years research in leadership effectiveness has moved towards identifying the leadership competencies such as knowledge, skills, abilities and behaviors of individuals. Also, Spendlove (2007) mentioned that, competencies are defined as sets of behaviors that are instrumental in the delivery of desired results or outcomes. (Bartram 2005). Even though some competencies are more difficult to learn than others (Tubbs and Schultz, 2005), however defining specific competencies can guide strategic human resource management practices in areas such as in recruitment and succession planning. Competencies and roles, offer a useful tool for leadership effectiveness. For effective leadership, competency models are not a prescription, but represent an attempt to capture the experience, lessons learned, and knowledge of seasoned leaders to provide a guiding framework for the benefit of others and the organization (Spendlove, 2007). Leaders who have higher competencies in the core areas are likely to be more effective. Competency can be gained through education, training and experience.

“Leadership development is becoming an increasingly critical and strategic imperative for organizations in the current business environment. Recent historical events and emerging trends emphasize the need to invest in the active development of leaders” (Leskiw & Singh, 2007). Leadership development, now and in the future, is a big business. More recent models of training leaders are being proposed by Bersin (2008) that emphasized on training that provides impact to individuals and organizations. The ability to inspire loyalty and build relationships is a key component of leadership (Newcomb, 2005).

While lists of leadership competencies were very popular in the 1980s, the most recent literature distills strategic leadership to a few key skills and competencies or a process. For example, Stephen Covey states

that strategic leaders have three basic functions: pathfinding, aligning, and empowering (Covey, 1996). Pathfinding deals with tying the organization's value system and vision with the mission and environment through a strategic plan. Aligning consists of ensuring the organizational structure, systems, and operational processes all contribute to achieving the mission and vision. Empowering is igniting the latent talent, ingenuity, and creativity in the people to accomplish the mission. Other leadership theorists bring up aspects of strategic leadership not included in Covey's typology. In his research on future strategic leadership, James F. Bolt focuses less on the environment and more on the leader (Bolt 1996). He argues that there are three dimensions of a leader: business, leadership, and personal effectiveness.

2.4 Interpersonal Skills

Although there is some variation in the literature over the exact skills that qualify under this heading (Chant, Jenkinson, Randle and Russell, 2002), most authors (e.g. Hargie, Owen and Dickson, 2004; Rungapadiachy, 1999) tend to agree on a number of core areas in which competency is essential for effective interpersonal interactions.

All relationships revolve around personal needs. The leader must keep in mind that people need other people and that the function of the relationship is to insure that all needs within the relationship are met. Failure to recognize this basic principle has caused many leaders to develop serious relationship problems with others in the organization or groups (Myron R., 2007). It is known that motivation, communication, and team building skills are interrelated and complementary, that's why leadership of organizations needs development in these areas (Gilley, McMillan, and Gilley, 2009). The leader's ability to motivate is more important than that of communication and team building. Different factors that contribute to organizational change and leadership effectiveness include: leader's ability to motivate, communicate, and build a team. In an Organization change cannot occur unless its member groups and individuals change by adopting different behaviours, processes, frameworks, routines, values, or goals. For effective organizational change, a leader must have different skills or behaviors such as leader's ability to motivate, communicate, and build team (Gilley, McMillan, and Gilley, 2009).

Many studies (Burke, 1992; Gill, 2003; Sims, 2002; Ulrich, 1998) showed that there are certain leader's skills and abilities which are positively associated with successful implementation of change, which includes the leader's abilities to coach, communicate, motivate, involve others, build teams, and reward, so it is clear that there is a positive link between leaders ability to motivate and leadership effectiveness. To be an effective leader and to bring effective change in an organization, leader must possess the ability

to motivate, communicate and build team (Gilley, McMillan, and Gilley, 2009), but these interpersonal skills may be differently required at different levels of management, which shows that levels of management has a moderating influence on leadership effectiveness. Interpersonal skills can be defined broadly as “those skills which one needs in order to communicate effectively with another person or a group of people” (Rungapadiachy, 1999, p.193). The foundation of helping or caring rests on the understanding of human behaviour and availability of effective interpersonal communication skills.

Trust is important in all spheres of social life. It binds friendships, facilitates bargaining and negotiations (Olekalns and Smith 2003), reduces transaction costs in inter-firm exchanges (Bharadwaj and Matsuno 2006), and even resolves international political conflicts (Kelman 2005). Pfeiffer’s (2006) lament that the American workplace is a "story of missed opportunities" (p. 30) challenges us to seek explanations for how we might create communal organizations characterized by trusting and meaningful relationships. Guided by an ethic of organizational democracy and an ethic of communication that demands managers and employees alike embrace their responsibilities to one another and increase understanding of interpersonal and organizational trust and how it may be jeopardized in ways that threaten the possibility of communal organizations (Knoll, D. & Gill, H. 2011). According to Six (2007, 292), if an organization’s management wishes to promote interpersonal trust-building in the organization, then a combination of three types of organizational policies can be effective: 1) by creating a culture in which relationships are important and in which showing care and concern for the other person’s needs is valued; 2) through normative control rather than bureaucratic control and 3) through explicit socialization to make newcomers understand the values and principles of the organization and how “we do things around here”.

2.5 Project Management Skills

Project management is a specialized branch of management which has evolved in order to co-ordinate and control some of the complex activities of modern industry. The changing business environment of the twenty first century increases the range of activities coming under the periphery of project management techniques and the way projects are managed. Projects are open systems because they exist in an open environment and have to respond to the ever changing dynamics of situations requiring it to become much more adaptive than ever.

Kerzner (2003) defines project management as the planning, organizing, directing, and controlling of company resources for a relatively short term objective that has been established to complete specific

goals and objectives. Project Management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements. Project management is accomplished through the use of the processes such as: initiating, planning, executing, controlling, and closing. The term project management is sometimes used to describe an organizational approach to the management of ongoing operations also referred to as management by projects. In the same many aspects of ongoing operations are treated as projects so as to apply the project management practices easily to them.

The preliminary results of the literature review indicated that there are very well-developed learning programs and universal methodologies for project management and coordination (Project Management Institute). A good example of general project management methodology is presented in Mingus, N. (2002) and Kerzner, H., (2003) and list the following main stages for a successful implementation of projects including: precise planning, selection of coordinator, selection and assignment of people to roles and tasks, proper conforming of tasks to timetable and to people, monitoring and controlling and providing a full documentation on the project's completion. As maintained by Nilsson & Söderholm (2005), planning and plans are intrinsic features of projects. Plans are meant to constitute and guide project team members as they work on realizing what ever project goals that have been set out for them. A plan can, however, only have a certain degree of sophistication. When project management practices on a day-to-day basis are examined, plans seem to dissolve and become less prescriptive.

As per Kulkarni, R., Bargstädt, H.J., & Huckfeldt, J. (2004), the projects, especially the ones having a longer lifecycle, could be categorized into many phases depending on the functions. For convenience and simplicity points of view, the three commonly known phases is utilized, namely: (1) Procurement phase:-from inception to the financial closure and beginning of works (tendering; dealing with governments, lenders, insurers, pressure groups, experts), (2) Execution phase:-project execution (site installation till routine processes are reached, significant completion) and (3) Operation and handover phase:-from significant completion till the end of defect liability period and handover.

ISAI (2007) presentation as Bienzle H. also underlines the critical role of planning. During the planning process of partnerships at the pre-starting phase the following factors should be taken into account: work out in your own project team your objective, resources, commitments; check carefully any problem in understanding the basic concepts; make the common aims and goals realistic, concrete and clear; make the common rules clear and practicable; make a detailed and publicized plan; agree on who does monitoring and evaluation and when. As regards coordination, Bienzle H. (2001) stresses the following tasks: managing contractual relations with the project partners, defining roles, building up a project

culture, forming teams, setting up and maintaining a communication system, setting up and maintaining information and reporting system, managing critical phases. Bienzle H. (2001) underlines a key role of the project coordinator and lists his/her key competences: experience of project work, knowledge of project management and how to use its tools, some prior experience of cooperation, negotiation skills, commitment to project work, experience of the content of the project, ability to manage complex structures and situations, communication skills, leadership ability and ability to cope with pressure.

A very important element of a good coordination process is the ability to manage a project team. ISAI (2007) lists also the crucial factors to successfully coordinate work plan implementation. LRDP (2003) in that context stresses the importance (as well as Bienzle H.) of reporting, monitoring and evaluating activities. Most of the projects we hear of in media are either over budget, late or are simply not good enough and still different lobbies of people claim that those projects have been successful. Neither the practitioners nor the academicians seem to agree on what constitutes project success. It seems to be a rather elusive concept that requires more research (Prabhakar, G. P, 2008).

In recent times, it has become a common belief that project success is defined by meeting the time, cost and quality requirements of organizations. However, there are some important project success criteria (PSCs) and factors (PSFs) which often get neglected when it comes to evaluating a project. The results of a survey, conducted by the researchers, show that to the contrary of what is mentioned in the literature, “Top Management Support” turned out to be the most important measure of project success. “Time” and “Quality” and their process, on the other hand, were not considered as critical success criteria (Shokri-Ghasabeh, Morteza, Kavousi-Chabok, Kamyar; 2009).

Turner & Müller (2004, 2005) have been studying the impact of project leader and his/her leadership style on project success. The research is still in progress. In the words of Turner & Müller (2005), “the literature on project success factors has largely ignored the impact of the project manager, and his or her leadership style and competence, on project success. However, that conclusion is in direct contrast to the general management literature, which postulates that the leadership style and competence of the manager has a direct and measurable impact on the performance of the organization or business. Thus, the authors have been commissioned by the Project Management Institute to study whether the leadership style and competence of the project manager is a success factor on projects and whether different styles are appropriate on different types of projects.” Therefore we can summarize that projects are unique in nature and much depends on the industry, size, location, nature, complexity, business environment etc. in

which they operate. The truth appears to be that the concept of ‘one size does not fit all’ is a good point to start with in certain cases (International Journal of Business and Management, 2008).

2.6 Financial Resources Management Capacity

This literature review focuses on the area of financial resources management skills, and further explores the mechanisms and practices that enable organizations to maintain financial health while simultaneously providing high impact services to all stakeholders (Hull & Lio, 2006). Traditional efforts to build organizations capacity have typically focused on expanding an organization’s financial resources. Solid financial management plays a critical role in the development and maintenance of effective organizations. Good financial management practices are critical elements of organization and demand careful attention in capacity building efforts (The Urban Institute, 2001). Financial resources management includes the competence to manage organizational resources, as well as the capacity to ensure efficient financial operations (TCC Group, 2010).

Basic skills such as cash management, bookkeeping and generating financial statements are essential skills in supporting a healthy organization. Basic accounting processes are generally included in the literature around financial management. By adhering to sound accounting principles, reliable financial information can be produced and stakeholders can be ensured of fiscal responsibility (Minnesota Council of Non-Profits, 2010). Budgeting is a key component in organizational management, and all organizations should have an operating budget. Budgets should include timelines, as well as the steps to be taken for implementation including an operating budget, which shows planned revenue and expenses for the year. Literature also recommends the development of program budgets for each major service that is provided to clients (Carpenter, 2007).

Financial statements are critical documents for an organization. In order to know how the organization is doing, some basic analysis is required. Individuals responsible for an organizations financial reporting should prepare and analyze reports on at least on a quarterly basis (Minnesota Council of Non-Profits, 2010). These financial statements should include; balance sheet, statements of functional income and expenses, and statement of cash flows (Carpenter, 2007). The types and frequency of reports depend on the nature of the organization and its business. However, the board of directors should be requiring regular financial reporting that are accurate, timely, in context and appropriate (Non-Financial Assistance fund, 2005). Financial reporting can be an essential element to legitimacy and trustworthiness by donors

(Verbruggen, Chriatians & Milis, 2011). Some donors will not provide funding unless they receive financial statements in the form of an annual review or audit (Carpenter, 2007).

Within the area of financial management there are key roles and functions that organizations should pay attention to in order to be financially healthy. In addition to the board, the role of the treasurer and finance committee need to be considered when building the financial capacity of the organization. The specifics of their roles and responsibilities should be laid out in their by-laws or constitutions (Non-Financial Assistance fund, 2011). Any discussion of financial management capacity cannot be complete without an exploration of financial management sustainability. Essentially, financial sustainability is the ability to maintain financial management capacity (Bowman, 2008). This includes short-term sustainability, as indicated by annual surpluses, as well as long-term sustainability indicated by asset growth (Bowman, 2011). Bowman in his study, he explores the concept of the “sustainability principle”. This principle asserts that sustainability requires sufficient annual surpluses to maintain asset values at replacement costs over the long-term while simultaneously maintain available financial resources in the short-term (Bowman, 2011).

2.7 Theoretical Framework

The researcher adopted leadership theories that draw together a diverse yet comprehensive set of information to act as a reference for those charged with this task for providing direction in WRUA leadership. A review of the leadership literature reveals an evolving ‘a series of ‘school’ of thought’ from “Great Man” and “Trait” theories to “Transformational” leadership (Table 2.1.). Whilst early theories tend to focus upon the characteristics and behaviors of successful leaders, later theories begin to consider the role of followers and the contextual nature of leadership.

The review offers some insights into the qualities of successful leaders, but there has been a shift in focus from the generic characteristics and behaviours of the individual to recognition of the importance of responding to different situations and contexts and the leaders’ role in relation to followers. The report concludes with a discussion of the competency framework approach to leadership and leadership development and a proposal as to alternative ways of addressing these issues. It is concluded that whilst this approach has its strengths, it leads to a particularly individualistic notion of leadership and a relatively prescribed approach to leadership development. The changing nature of work and society, it is argued, may demand new approaches that encourage a more collective and emergent view of leadership and leadership development and of sharing the role of “leader” more widely within organizations (Bolden, R., Gosling, J., Marturano, A. and Dennison, P., 2003).

The seven leadership theories are presented in Table 2.1.

Table 2.1

Leadership theories

Theory	Theory concept
Great Man Theories	Based on the belief that leaders are exceptional people, born with innate qualities, destined to lead. The use of the term 'man' was intentional since until the latter part of the twentieth century leadership was thought of as a concept which is primarily male, military and Western. This led to the next school of Trait Theories.
Trait Theories	The lists of traits or qualities associated with leadership exist in abundance and continue to be produced. They draw on virtually all the adjectives in the dictionary which describe some positive or virtuous human attribute, from ambition to zest for life.
Behaviorist Theories	These concentrate on what leaders actually do rather than on their qualities. Different patterns of behavior are observed and categorized as 'styles of leadership'. This area has probably attracted most attention from practicing managers.
Situational Leadership	This approach sees leadership as specific to the situation in which it is being exercised. For example, whilst some situations may require an autocratic style, others may need a more participative approach. It also proposes that there may be differences in required leadership styles at different levels in the same organization.
Contingency Theory	This is a refinement of the situational viewpoint and focuses on identifying the situational variables which best predict the most appropriate or effective leadership style to fit the particular circumstances.
Transactional Theory	This approach emphasizes the importance of the relationship between leader and followers, focusing on the mutual benefits derived from a form of 'contract' through which the leader delivers such things as rewards or recognition in return for the commitment or loyalty of the followers.
Transformational Theory	The central concept here is change and the role of leadership in envisioning and implementing the transformation of organizational performance.

Note: From: Centre for Leadership Studies, University of Exeter United Kingdom, June 2003

Each of the theories in Table 2.1 takes a rather individualistic perspective of the leader, although a school of thought gaining increasing recognition is that of “dispersed” leadership. This approach views leadership as a process that is spread throughout an organization rather than lying solely with the formally designated ‘leader’. The emphasis thus shifts from developing ‘leaders’ to developing ‘leaderful’ organizations with a collective responsibility for leadership (Bolden, R., Gosling, J., Marturano, A. and Dennison, P., 2003).

James McGregor Burns in his book *Leadership* (1978) introduces the notion of transactional and transformational leadership, which have remained one of the most popular leadership models.

Transactional leadership is built on reciprocity, the idea that the relationship between leader and their followers develops from the exchange of some reward, such as performance ratings, pay, recognition, and praise. It involves leaders clarifying goals and objectives, communicating to organize tasks and activities with the co-operation of their employees to ensure that wider organizational goals are met. Such a relationship depends on hierarchy and the ability to work through this mode of exchange. It requires leadership skills such as the ability to obtain results, to control through structures and processes, to solve problems, to plan and organize, and work within the structures and boundaries of the organization (Marturano, A., 2004).

Transformational leadership, on the other hand, is concerned with engaging the hearts and minds of others. It works to help all parties achieve greater motivation, satisfaction and a greater sense of achievement. It requires trust, concern and facilitation rather than direct control. The skills required are concerned with establishing a long-term vision, empowering people to control themselves, coaching, and developing others and challenging the culture to change. In transformational leadership, the power of the leader comes from creating understanding and trust. In contrast, in transactional leadership power is based much more on the notion of hierarchy and position (Marturano, A., 2004).

2.8 Core Competency Frameworks

The concept of competency frameworks was widely adopted as a basis for management education and development in the UK following the Review of Vocational Qualifications report in 1986 (De Ville, 1986) and continues to be widely promoted.

The United Nations Competency Development Guide has been designed to provide UN Staff Members with guidance on how to develop behaviours and skills within specific UN competency areas, through a variety of methods including formal training, on the job development, job

simulations, observation, feedback, informal coaching, reading, and audio visual references. It helps the staff create a personal development plan tailored to their individual needs, offers advice on the type of development activities available in their current job, and also helps them identify how they can develop in areas that are not tested in their daily work environment. "I want the world to see that the United Nations is becoming a more performance-driven Organization that sets clear goals within specific timeframes, communicates them widely, and reports the results openly," (UN Secretary-General Banki-Moon, 2010).

DFID is among the big organizations in the world that is committed to being a successful and effective organization and recognizes the important role competencies play in helping to change the culture of the organization, build capability and improve team and individual performance. The Core Competency Framework is a flexible tool which can be used to support a wide range of activities (UK-DAC Peer Review Report, 2006). Core competencies are personal attributes or underlining characteristics, which combined with technical or professional skills, enable the delivery of a role/job or posting. The DFID Core Competency Framework is an outline which is consistent across the organisation and helps identify the types of behaviour the organisation wishes to promote and develop (DFID, 2010).

The review of leadership theory covered the main developments in leadership thinking from the trait approach through the behavioural and contingency schools, situational leadership, transactional and transformational leadership and distributed leadership. The aim of Bolden et al's (2009) study was to develop ideas about how leadership could be enhanced through the encouragement of collective behavior. They address this through five themes, structural approaches to leadership, individual motivation, collective leadership, context of HE and leadership development (Bolden et al., 2009). The study focused on leaders in formal position but they believe its findings to be more generalizable to individuals in informal positions, as they conclude that bottom-up and horizontal leadership plays an important role in institutions.

2.9 Conceptual Framework

According to Miles and Huberman (1994), "A conceptual framework explains, either graphically or in narrative form [diagrams are much preferred], the main things to be studied - the key factors, constructs or variables - and the presumed relationships among them" (p. 18). The task here is to create a diagram of clearly defined variables along with the relationships of those variables and key factors that influence the variables and the relationships.

Water Resources Management Strategic Leadership Skills

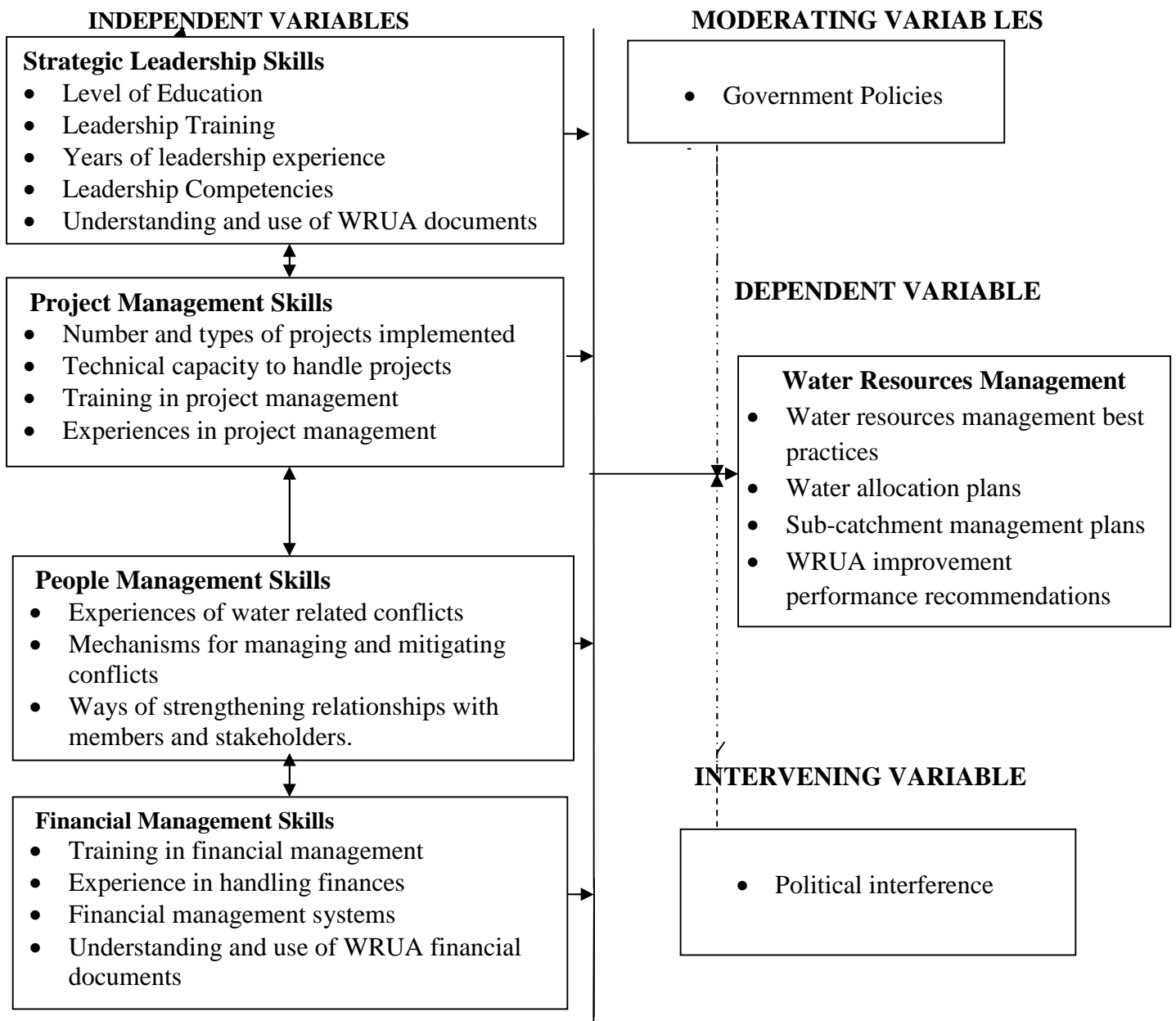


Figure 1: Conceptual Framework

Figure 1 reveals the interplay among the variables and how the basic elements of the study are connected.

2.10 Research Gaps

The Conceptual framework has set out the terms of reference for the data analysis. It has defined the main concepts and outlines how the basic elements of the study are connected. It describes the independent, dependent, moderating and intervening variables. Therefore, it provides the context for interpreting the research findings.

A Conceptual Framework captures seven blocks representing the independent variables, intervening variables and moderating variables all pointing to the dependent variable with relational arrows. The diagrammatic presentation explains the relationships among the variables. It shows how the strategic leadership skills, project management skills, people management skills, financial management skills influence water resources management. It also shows how Government policies and Political interference influence water resources management indirectly.

2.11 Summary of the Chapter

This chapter has provided the available literature on key competencies of WRUA leadership that influence the management of water resources in the global, regional, national and local contexts. The chapter also presented a conceptual framework reflecting the relationship between the identified dependent variable (water resources management) and independent variables (strategic leadership, project management, people management, and financial management) which provided the context for interpreting the research findings.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This Chapter deals with the research methodology. The research methodology applied for the purposes of this study covered in detail areas like research design, population of study, sampling technique, data collection method, variability and reliability of research instruments, definition of variables, data analysis method and finally gives a summary of the main issues in the chapter.

3.2 Research Design

Research design is the approach adopted for collecting data in a manner that ensures that the required information is obtained. In this study, the researcher adopted a descriptive survey design. According to Cooper and Schindler (2006), descriptive survey is a study concerned with finding out what, where, and how of a phenomenon. Descriptive research design was chosen because it helped to describe the state of affairs of the problem under investigation and was concerned with specific predictions, facts and characteristics of the target population. The research design ensured protection against bias and unreliability with due concern for the economical completion of the study. The research design focused attention on the following core areas of the study: 1) formulating the objective of the study, 2) designing the methods of data collection, 3) selecting the sample, 4) collecting the data that is complete, comprehensive, consistent and reliable, 5) processing and analyzing the data and reporting the findings.

3.3 Target Population

According to Mugenda and Mugenda (2003), target population is the members of a real or hypothetical set of people, events or objects the researcher wishes to generalize the results of the research. According to Mugenda and Mugenda (2003), the target population should have some observable characteristics, to which the researcher intends to generalize the results of the study. The study targeted a population of 250 WRUA leaders from Mount Kenya region comprising of chairpersons, secretaries and treasurers or other executive committee member (vice-chair and vice secretary) that constitute the WRUA executive management committee.

3.4 Sample Size and Sampling Procedure

The study population and sample size is presented in Table 3.1

Table 3.1
Distribution and sample of study population

County	No. of WRUA leaders	Sample size of WRUA leaders	%
Nyeri	55	33	60
Muranga	35	21	60
Kirinyaga	80	48	60
Embu	80	48	60
TOTAL	250	150	60

Table 3.1 reveals the study population and the sample size. Salkind (2005) proposes a rule of the thumb for determining a sample size and says that a size of 30 to 500 is appropriate for most academic researches. The researcher has chosen 60% sample size of total population from the targeted 250 WRUA leaders. In this case, 60% of 250 WRUA leaders mean 150 respondents were chosen to participate in the study.

Sampling is the process of selecting a number of individuals for a study in such a way that the individuals selected represent the large group from which they were selected. Sampling involves the researcher securing a representative group that will enable the researcher to gain information about the population (Mugenda and Mugenda, 2003). The researcher chose purposeful sampling technique for this study. Choosing the purposive sample is fundamental to the quality of data gathered; thus, reliability and competence of the informant must be ensured (Ma Dolores, 2007). The researcher chose the four counties of Nyeri, Embu, Kirinyaga and Muranga where a list of all WRUAs to be studied was made using purposive sampling method. The study targeted three executive committee members; chairperson, secretary and treasurer or other executive committee members (vice-chair and vice secretary) from each WRUA; as they had good understanding of the mandate and operations of WRUAs.

3.5 Research Instruments

According to Mugenda and Mugenda (2003), questionnaires are commonly used to obtain important information about a population under study. The researcher collected data from both primary and secondary sources using questionnaire and interview guide. The questionnaire is a valid way of measuring as it aims at finding out what is practiced or understood. The questionnaire comprised of multiple choice, open-ended and “Yes” and “No” questions. The respondents were given questionnaires they filled and given an opportunity to ask questions for clarification where they did not understand. The researcher used the interview guide for the key informant interviews and focus group discussions that provided more focus on the detailed information and deep insights required.

3.6 Validity of the Instruments

Validity refers to whether or not a method measures what it is intended to measure in relation to a theoretical framework and empirical definitions (Esaiasson 2005). Abel and Olive Mugenda (2003) define validity as the degree of accuracy with which results obtained from analyzed data represent the reality of the phenomenon under study.

In other words, the instrument is expected to measure what it is supposed to measure. That is the reason, the researcher discussed the meaning of all the significant terms with experts, especially the supervisor and undertook content analysis on the subject matter to establish and ensure validity of the selected instruments.

3.7 Reliability of the Instruments

Reliability is high if the analysis of documents and interviews is correct (Esaiasson 2005). According to Mugenda and Mugenda (2003) reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials. An instrument is reliable when it can measure a variable accurately and obtain same results under same conditions over a period of time. The research design is meant to minimize random error and hence increase the reliability of the data collected. The researcher set the reliability coefficient at 0.80 or more that ensured high degree of reliability of the data collected. According to Eshiwani (1996), pilot testing is important in the research process because it reveals vague questions and unclear instructions in the instrument. The researcher pre-tested the research instruments by administering questionnaires in the neighboring Machakos County. The researcher used the pretest

technique to capture important comments and suggestions from the respondents improving efficiency of the instrument, adjusting strategies and approaches to maximize the response rate as can be deduced from Table 4.1 with a questionnaire return rate of 91.3 %. The in-depth discussions with the research assistant on the interview process and identifying an appropriate venue conducive for interviews raised reliability higher.

3.8 Data Collection Procedure

According to Mugenda and Mugenda (2003), questionnaires are commonly used to obtain important information about a population under study. The main task in interviewing is to understand the meaning of what the interviewees say and interviews are particularly useful for getting the story behind a participant's experiences and as a follow-up to certain respondents to questionnaires. The researcher collected data from both primary and secondary sources to achieve its four specific objectives.

The researcher engaged a research Assistant to help in data collection. The research assistant was qualified with Community Development with prior experience in data collection. He was trained and taken through the questionnaire and interview schedule prior to the piloting phase. For ease of data collection where it was possible, all respondents assembled at a common venue through mobilization by their leaders. WRMA took care of the facilitation in terms of their travel and upkeep to ensure maximum participation.

All efforts were made by the researcher and research assistant to ensure completeness of questionnaires before respondents left venue of meeting. All questionnaires were certified completely filled before data entry. The Research instruments used in the data collection were questionnaires and an interview schedule. According to Mugenda and Mugenda (2003), questionnaires are commonly used to obtain important information about a population under study. The researcher obtained primary data through the distribution of questionnaires to the key respondents. According to Denzin and Lincoln (2000), an in depth questionnaire leads to generation of insightful facts, statistical information and permit a better understanding of organizational complexity. The questionnaires were designed properly to ensure that they provided data that is valid and reliable. They were appropriate because they saved time and targeted literate respondents. Equally the respondents felt free to answer sensitive questions as they were not required to disclose their identity (Mulusi, 1988 as cited by Mugambi, 2006). The researcher assembled the respondents at a central venue where the interviews were conducted. All questionnaires were given unique numbers to help in track them in case of erroneous entries or missing information.

3.9 Data Analysis Technique

The data collected by the researcher was analyzed using the statistical package for social sciences (SPSS) encompassing a wide range of both quantitative and qualitative analysis. Data was first cleaned by ensuring completeness of information at the point of collection. It was then coded and organized into different categories. Qualitative data analysis included describing patterns and general trends in the data sets and providing descriptive summaries in the form of tables, figures and charts. Finally the researcher interpreted all the data in order to draw inferences over factors that influenced the dependent variable, drew conclusions and made recommendations.

3.10 Ethical considerations

Informed consent was obtained from all those that participated in the study. Those that were not willing to participate in the study were not under any obligation to do so. Respondents were advised appropriately not to write their names anywhere in the data collection tools for confidentiality and were assured that the information gathered will only be used for the purposes of this study. The necessary research authorities were consulted and permission granted.

3.11 Operationalization of Variables

Table 3.2 presents the Operationalization of Variables used in the field.

Table 3.2: Operationalization of Variables

OBJECTIVE	TYPE OF VARIABLE	INDICATOR(S)	MEASUREMENT	SCALE OF MEASUREMENT	DATA COLLECTION METHOD	TOOL OF DATA ANALYSIS
To determine factors influencing the management of Water Resources in Mount Kenya region	Dependent Variable: Water Resources Management	Water resources management best practices Sub-catchment management plans The Water allocation plans WRUA improvement performance recommendations	List of good practices in Water Resources Management No. of catchment management plans developed No. of water allocation plans developed List of partners in catchment management	Ratio	Interview guide, Questionnaire	Descriptive statistics
To determine how strategic leadership skills of the WRUA leadership influences the management of water resources in Mount Kenya region.	Independent Variable: Strategic Leadership Skills	Level of education Period of strategic leadership training Years of leadership experience Leadership Competencies Understanding and use of relevant WRUA documents Issues hindering WRUA operations	Completed level of education Weeks of training Years as WRUA member Years as WRUA official List of WRUA leadership competencies List of challenges	Ratio Nominal	Interview guide, Questionnaire	Descriptive statistics
To establish how interpersonal skills of the WRUA leadership influences	Independent Variable: Interpersonal	Experiences of water resources related conflicts	Frequency of conflicts List of conflict mitigation strategies	Ratio	Interview guide, Questionnaire	Descriptive statistics

the management of water resources in Mount Kenya region.	Skills	Responses to conflicts Relationship strengthening efforts	List of relationship strengthening strategies	Interval		
To explore how project management skills of the WRUA leaders influences the management of water resources in Mount Kenya region.	Independent Variable: Project Management Skills	Projects implemented in the past 12 onths Training topics and duration Project management experience Project management challenges	List of projects completed in the past 12 months Weeks of training Subjects covered Years of experience	Ratio Nominal	Interview guide, Questionnaire	Descriptive statistics
To investigate how financial resources management capacity of the WRUA leaders influence the management of water resources in Mount Kenya region.	Independent Variable: Financial Resources Management Capacity	WRUA training in financial resources management WRUA solid financial management systems WRUA reference financial documents Sources of funding Responsibility of handling WRUA finances Financial management challenges	Weeks of training Training topics List of financial management systems List of financial basics and documents List of funding sources List of officials handling finances List of experienced challenges	Ratio	Interview guide, Questionnaire	Descriptive statistics

3.12 Summary of the Chapter

The Chapter has outlined the research methodology used in the study and it includes research design, target population, sample size and sampling techniques, sample size, sampling techniques, research instruments, questionnaires, validity of the instruments, reliability of the instruments, and finally piloting of the research instruments. The chapter also presents the Operationalization of Variables table

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION OF FINDINGS

4.1 Introduction

This Chapter presents the data analysis, presentation, interpretation and discussions of the study findings on the influence of the WRUA leadership competencies in the management of water resources in Mount Kenya region.

4.2 Questionnaire Return Rate

The questionnaire return rate is presented in Table 4.1

Table 4.1

Questionnaire return rate

Response	(f)	%
Returned	137	91.3
Not Returned	13	8.7
Total	150	100.0

Table 4.1 reveals that 91.3 % of the respondents filled and returned their questionnaires. Therefore, according to Mugenda and Mugenda (2003) and Salkind (2005), the study results are representative, reliable and acceptable.

4.3 Respondents Background

This section of the report provides some background information about the respondent's composition, FGDs participants, gender and age.

4.3.1 Respondents Composition

The composition of the respondents in the study is presented in Table 4.2

Table 4.2

Respondent's composition

Respondents Composition	(f)	%
Chair person	48	35.0
Secretary	41	29.9
Treasurer	36	26.3
Other	12	8.8
Total	137	100.0

Table 4.2 shows that 91.2% of the respondents who participated in the study were WRUA executive committee members (Chairperson, Secretary and Treasurer), responsible for handling day-to-day operations of WRUAs. This response outcome is a significant achievement despite the limitations, making the study results dependable and gives a true picture of what is happening. Others who participated in the study were vice chairperson, vice secretary, finance sub-committee chairperson, monitoring sub-committee chairperson and committee member at 8.8 %

4.3.2 FGDs Participants and Stakeholders

The FGDs participants and stakeholders are presented in Table 4.3.

Table 4.3

FGDs participants and stakeholders

FGD No.	County	Participating WRUAs	No. of stakeholders represented	No. of FGD participants
1.	Nyeri	Chania, Chinga, Nairobi, Rwarai, Thiha	15	15
2.	Nyeri	Gura, Ragati, Honi	12	12
3.	Kirinyaga	Rutui, Upper Thiba, Gatondo, Kakinya, Kiiye, Mugaka, Kiringa, Kamuthiga, Mukengeria,	9	15
4.	Murang'a	Maragua, North Mathioya, South Mathioya, Saba, Thika Upper	11	11
5.	Embu	Kawango, Thambana, Kapingazi, Kiriiri, Wachoro	7	11
6.	Kirinyaga	Upper Nyamidi, Lower Nyamidi, Kamweti, New Kandakame	8	8
7.	Murang'a	Lower Chania, Thika, Kayaweh, Kiama,	5	10
TOTAL			67	82

Note: FGDs Participants are WRUA members who participated in the focus group discussions during the study. The WRUA Stakeholders are community groups, farmer groups, government agencies, schools, businesses, water supply projects/companies, tea and coffee factories or individuals who have interest in the water resources and actively participated in the study.

Table 4.3 demonstrates that 35 WRUAs, 67 stakeholders and 82 respondents participated in the seven focus group discussions (FGDs). The wide participation of the three categories is a contributing factor to more effective, relevant and sustainable results. The researcher posed questions to the whole group as participants responded and talked to each other.

4.3.3 Gender of the Respondents

The gender of the respondents is presented in Table 4.4.

Table 4.4

Gender of the respondents

Gender	(f)	%
Male	99	72.3
Female	38	27.7
Total	137	100.0

Table 4.4 demonstrates that the respondents are comprised of 72.3% men and 27.7% women. This means that women are facing some difficulties to be elected as WRUA officials, limiting their contribution in water resources management. From all the 50 WRUAs sampled for this study, only one (Kawango WRUA) is headed by a woman as a chairperson implying that women may be facing obstacles of being elected to the WRUA top leadership.

4.3.4 Distribution of Respondents by Age

The age groups of the respondents are presented in Table 4.5

Table 4.5

Age groups of respondents

Age Group	(f)	%
Over 60	37	27.0
50-59	46	33.6
40-49	40	29.2
30-39	13	9.5
Under 30	1	0.7
Total	137	100.0

Table 4.5 illustrate that about 90% of the respondents are above 40 years of age. This means that the respondents are composed of mature, experienced and skilled leaders, some whom are retired public officers.

4.4 The Influence of Strategic Leadership Skills on Water Resources Management

This section of the report provides the findings of the study on how the level of education, leadership training, years of leadership experience, leadership competencies, understanding and use of WRUA documents influence water resources management in Mount Kenya region.

4.4.1.1 The WRUA Leadership Level Of Education

The Education level of the respondents is presented in Table 4.6

Table 4.6

WRUA leadership level of education

Level of Education	(f)	%
University	7	5.1
Tertiary college	45	32.9
Secondary	66	48.1
Primary	19	13.9
Total	137	100.0

Table 4.6 reveals that 86.1% of the respondents have secondary school level of education and above. This means that majority of the respondents have higher level of education and have a great potential for the development of WRUAs and water resources management in Mount Kenya region.

4.4.2 The WRUA leadership Years of active WRUA membership

The respondent's years of active WRUA membership is presented in Table 4.7.

Table 4.7

Respondent's years of active WRUA membership

Years of Active WRUA Membership	(f)	%
Above 4 years	74	54.0
3-4 years	42	30.7
1-2 years	21	15.3
Total	137	100.0

Table 4.7 shows that over 84% of the respondents have been active members of WRUAs for 3 years and above. This implies that they have experience and understand well WRUA operations and water resources management issues in Mount Kenya region.

4.4.3 The Years of being WRUA official

Information on the number of years the respondents have been a WRUA official is presented in Table 4.8

Table 4.8

Years of being WRUA official

Years of Active WRUA Membership	(f)	%
Above 4 years	56	40.9
3-4 years	48	35.0
1-2 years	31	22.6
Below 1 year	2	1.5
Total	137	100.0

Table 4.8 demonstrates that over 75% of the respondents have been WRUA officials for 3 years and above. This means that majority of WRUA leaders have acquired strategic leadership skills through experience while serving as WRUA officials.

4.4.4 Other engagements of WRUA officials

The other tasks the respondents were engaged in their communities are presented in Table 4.9

Table 4.9

Other tasks the respondents were engaged in their communities

Other tasks the respondents are engaged in their communities	(f)			%		
	Yes	No	Total	Yes	No	Total
SHG/CBO/NGO leader	96	41	137	70.1	29.9	100
Local community leader	73	64	137	53.3	46.7	100
Community service volunteer	45	92	137	67.2	32.8	100
Civil servant/Teacher	7	130	137	5.1	94.9	100
Politician	2	135	137	1.5	98.5	100
Entrepreneurship	17	120	137	12.4	87.6	100

Table 4.9 reveals that majority of the respondents were actively engaged in their communities, serving in various responsibilities. This means that they have learnt and acquired some strategic leadership skills they are applying in their current responsibilities.

4.4.5 The WRUA officials best competencies

The respondent's best competencies are presented in Table 4.10

Table 4.10

The respondents best competencies

Respondents best competencies	(f)			%		
	Yes	No	Total	Yes	No	Total
Communication	88	49	137	64.2	35.8	100
Working with people	116	21	137	84.7	15.3	100
Problem solving	80	57	137	58.4	41.6	100
Relational Skills	30	107	137	21.9	78.1	100
Conflict resolution	68	69	137	49.6	50.6	100
Project management	79	58	137	57.7	42.3	100
Interpersonal Skills	18	119	137	13.1	86.9	100
Strategic leader	22	115	137	16.1	83.9	100
Financial Management	44	93	137	32.1	67.9	100
Visionary	22	115	137	16.1	83.9	100
Training and Coaching	19	118	137	13.9	86.1	100

Table 4.10 provides the best four competencies of the respondents that include: working with people (84.7%), communication (64.2%), problem solving (58.4%) and project management (57.7%). This means that the respondents may not be utilizing these skills to address some of the challenges WRUA are experiencing to improve their performance. The study also found out that the respondents had low competencies in some key areas, a concern to the researcher. This implies that the respondents are underperforming in this areas and need capacity building to make them more effective and efficient in water resources management.

4.4.6 The Strategic Leadership Training

The respondent's attendance of strategic leadership training is presented in Table 4.11.

Table 4.11

Attendance of strategic leadership training

<i>Training attendance</i>	(f)	%
Yes	121	88.3
No	16	11.7
Total	137	100.0

Table 4.11 shows that majority of the respondents have been trained on strategic leadership skills at 88.3%. This implies that the respondents have acquired some skills that would be of value in water resources management.

The respondent's period of strategic leadership training is presented in Table 4.12.

Table 4.12

The period of strategic leadership training

Period of Training	(f)	%
Over 4 weeks	4	2.9
3-4 weeks	16	11.7
1-2 weeks	15	10.9
1 week	43	31.4
Less than 1 week	59	43.1
Total	137	100.0

Table 4.12 reveals that 74.5% of the respondents have been trained on strategic leadership skills for a period of one week or less. This implies that the training offered was short.

The topics covered during the strategic leadership training are presented in Table 4.13.

Table 4.13***Topics covered during the strategic leadership training***

Topics covered during the strategic leadership training	(f)	%
Leadership	28	20.4
Governance	22	16.0
Conflict management and resolution	21	15.3
Financial Management	20	14.6
Leadership and Governance	13	9.5
WRUA roles and responsibilities	6	4.4
Communication	5	3.6
Record keeping	3	2.2
Water Act 2002	3	2.2
Project management	3	2.2
Gender and Gender mainstreaming	2	1.5
Others	11	8.0
Total	137	100

Table 4.13 demonstrate that majority of the respondents were trained on leadership, governance, financial management and conflict management and resolution at 75.8%. This means that the short training received equipped them with relevant skills of value in water resources management.

4.4.7 Documents available and used by WRUAs

The documents used by the respondents are presented in Table 4.14.

Table 4.14

Documents used by the respondents

Reference documents used by the respondents	(f)			%		
	Yes	No	Total	Yes	No	Total
WRUA vision and mission statement	74	63	137	54	46	100
Water Act 2002	87	50	137	63.5	36.5	100
Water resources management rules 2007	72	65	137	52.6	47.4	100
Water Allocation Plan	35	102	137	25.5	74.5	100
Sub-catchment management plan	93	44	137	67.9	32.1	100
WRUA Constitution	125	12	137	91.2	8.8	100
Procurement procedures	84	53	137	61.3	38.7	100
Rules and Procedures of handling funds	76	61	137	55.5	44.5	100
Visitors' book	108	29	137	78.8	21.2	100
Minutes recording book	122	15	137	89.1	10.9	100
Cash book	111	26	137	81.2	19.0	100
Cheque book	100	37	137	73.0	27.0	100

Table 4.14 reveals that 74.5% of the respondents lack Water Allocation Plans (WAP) and 47.4% lack water resources management rules 2007. This implies that the respondents have no formula on how they allocate water to consumers and manage the available water resources in Mount Kenya region, especially during reduced flows and drought. The reasons for lacking WAPs may include lack of appropriate tools and facilities, inadequate financial resources for WAPs development resulting encroachment of water conservation areas, weak community participation and coordination, and frequent water related conflicts experienced in Mount Kenya region as also confirmed in Tables 4.16 and 4.23.

4.4.8 Critical issues hindering WRUA operations

The Critical issues hindering WRUA operations are presented in Table 4.15.

Table 4.15

Critical issues hindering WRUA operations

Critical issues hindering WRUA operations	(f)	%
Lack of sufficient funds for WRUA activities	94	68.6
Poor leadership, lacking appropriate skills and knowledge	10	7.2
Encroachment of water conservation areas (wetlands, river banks and springs)	5	3.7
Lack of sub-catchment management plan	5	3.7
Lack of income generating activities	5	3.7
Low community participation and support	5	3.7
Lack of government support including lack of enforcement of water resources rules and regulations	4	2.9
Lack of established and equipped office	4	2.9
Others	5	3.7
Total	137	100

Table 4.15 demonstrates that lack of sufficient funds for WRUA activities is the most pronounced challenge hindering WRUA operations at 68.6% that requires an immediate response. This is also confirmed in Table 4.31. This means that even though the respondents have some strategic leadership skills, they cannot be utilized due to lack of funds for WRUA activities. This situation renders the WRUAs inactive which influences water resources management negatively.

4.5 The Influence of Interpersonal Skills on Water Resources Management

This section provides experiences of water related conflicts, mechanisms for managing and mitigating conflicts and ways of strengthening relationships with WRUA members and stakeholders.

4.5.1 WRUAs experience of water related conflicts in the past 12 months

The respondent's experience of water related conflicts in the past 12 months is presented in Table 4.16

Table 4.16

The respondent's experience of water related conflicts in the past 12 months

Response	(f)	%
Yes	85	62.0
No	52	38.0
Total	137	100.0

Table 4.16 reveals that 62% of the respondents experienced water related conflicts in the past 12 months in times of low water availability. This implies that most WRUAs are experiencing conflicts and the respondents may be lacking skills of managing and mitigating conflicts.

4.5.2 The WRUA Mechanisms for Managing and Mitigating Conflicts

The respondent's mechanisms for managing and mitigating conflicts are presented in Table 4.17

Table 4.17

The Respondents mechanisms for managing and mitigating conflicts

Mechanisms for managing and mitigating conflicts	(f)			%		
	Yes	No	Total	Yes	No	Total
Takes steps to prevent counterproductive confrontations	78	59	137	56.9	43.1	100
Take steps to prevent potential situations that could result in unpleasant confrontations	83	54	137	60.6	39.4	100
WRUA sub-committee on conflicts	81	56	137	59.1	40.9	100
Use of community elders/local government representatives-chiefs	99	38	137	72.3	27.7	100
Encourage creative tension and differences of opinion	41	96	137	29.9	70.1	100

Table 4.17 shows that majority of the respondents preferred using community elders and local government representatives-chiefs (72.3%), proactive measures (60.6%) and WRUA sub-committees (59.1%) in managing and mitigating water related conflicts. This implies that the role of the community elders and local government representatives-chiefs is appreciated and critical in mitigating conflicts but are not being utilized by the respondents making WRUAs vulnerable as noted in Tables 4.16, 4.23 and 4.31.

4.5.3 The Ways Respondents are Strengthening Relationships with members and stakeholders

The respondent's mechanisms for strengthening relationships with members and stakeholders are presented in Table 4.18.

Table 4.18

Ways WRUA leadership is strengthening relationships with members and stakeholders

Ways the respondents are strengthening relationships with members and stakeholders	(f)			(%)		
	Yes	No	Total	Yes	No	Total
Organize common activities periodically	41	96	137	30.0	70.0	100
Hold consultative meetings regularly	79	58	137	57.7	42.3	100
Organize membership education open days	49	88	137	35.8	64.2	100
Visit the members/stakeholders	52	85	137	38.0	62.0	100
Maintain regular communication through calls and letters	41	96	137	30.0	70.0	100
Takes responsibility to build and maintain positive relationships and value opinion of others	43	94	137	31.4	68.6	100
Other areas of leadership strengthening e.g. attending group meetings, capacity building, awareness creation, networking and monitoring visits	46	91	137	33.6	66.4	100

Table 4.18 demonstrates that majority of the respondents have not participated in relationship strengthening activities in the past 12 months. This implies that relationship strengthening is not a priority activity for WRUAs and may be the reason why majority of them are experiencing water related conflicts, encroachment of water conservation areas and weak community participation. This reality is also confirmed in Tables 4.16 and 4.23.

4.6 The Influence of Project Management Skills on Water Resources Management

This section provides the findings on the number and types of projects implemented in the last 12 months, training in project management, experiences in managing projects and challenges experienced in managing projects in Mount Kenya catchment area.

4.6.1 The Projects implemented in the last 12 months.

The Projects implemented by WRUAs in the last 12 months are presented in Table 4.19.

Table 4.19

The Projects implemented by WRUAs in the past 12 months

Projects implemented in the last 12 months	(f)	%	% of Cases
Abstract surveys	58	10.3	43.0
Development and implementation of water allocation plans	22	3.9	16.3
Pegging the river line	46	8.2	34.1
Wetlands restoration	15	2.7	11.1
Pollution control along rivers and tributaries	55	9.8	40.7
Establishment of tree nurseries	43	7.7	31.9
Tree planting	63	11.2	46.7
Constructing soil and water conservation structures	12	2.1	8.9
Enforcement of the law-water Act 2002	28	5.0	20.7
Public education and awareness creation on water catchment management and protection	51	9.1	37.8
WRUA management community training/capacity building	57	10.1	42.2
Water infrastructure development and rehabilitation	9	1.6	6.7
Poverty reduction through implementation of livelihood activities	37	6.6	27.4
Fundraising and resource mobilization through proposal writing	22	3.9	16.3
Monitoring and information gathering	30	5.3	22.2
Any other	6	1.1	4.4
None	8	1.4	5.9
Total	562	100.0	416.3

Table 4.19 shows the top seven projects implemented during the past 12 months that include: tree planting (46.7%), abstraction surveys (43%), WRUA management committee and community training (42.2%), pollution control along rivers and tributaries (40.7%), public education and awareness creation

(37.8%), pegging the river line (34.1%), establishment of tree nurseries (31.9%). This means that WRUAs are actively involved in the implementation of projects that have significant impact on water resources management in Mount Kenya catchment area and have a potential to do more.

4.6.2 Training in Project Management

Information on the respondents who have attended Project management Training is presented in Table 4.20

Table 4.20

The respondents who attended project management training

Training Attendance	(f)	%
Yes	114	83.2
No	23	16.8
Total	137	100.0

Table 4.20 indicates that majority of the respondents had attended project management training at 83.2%, thus acquiring some skills that would be of value in water resources management.

Information on the period of project management training is presented in Table 4.21.

Table 4.21

Respondents Period of Project Management Training

Period of training	(f)	%
Over 4 weeks	3.6	2.6
3-4 weeks	5.3	3.9
1-2 weeks	10.7	7.8
1 week	51.6	37.7
Less than 1 week	65.8	48.0
Total	137	100.0

Table 4.21 reveals that the amount of training offered was short with a large majority at 85% having had one week or less. However, the skills gained helped them to implement water resources management related projects.

The topics covered during the project management training are presented in Table 4.22.

Table 4.22

Topics covered during the project management training

Topics covered during training	(f)			%		
	Yes	No	Total	Yes	No	Total
Managing people/working with people	41.1	95.9	137	30.0	70.0	100
Strategic planning	32.0	105.0	137	23.4	76.6	100
Proposal writing	41.1	95.9	137	30.0	70.0	100
Monitoring and Evaluation	71.5	65.5	137	55.1	44.9	100
Fundraising and external relations	24.4	112.6	137	17.8	82.2	100
Report writing	44.1	92.9	137	30.0	70.0	100
Conducting surveys and studies	15.1	121.8	137	11.1	88.9	100
Community mobilization	59.4	77.6	137	43.4	56.6	100

Table 4.22 shows that the training received was certainly limited where on average 30.1% of the respondents were trained in all key project management topics.

4.6.3 The Project Management Challenges experienced in Mount Kenya region

The project management challenges respondents experienced in Mount Kenya region are presented in Table 4.23

Table 4.23

Project management challenges experienced in Mount Kenya region

Experienced project management challenges	(f)			%		
	Yes	No	Total	Yes	No	Total
Water scarcity	62	75	137	45.3	54.7	100
Water resources conflicts	64	73	137	46.7	53.3	100
Weak enforcement of water resources rules and regulations	56	81	137	40.9	59.1	100
Deteriorating water quality due to increasing pollution	62	75	137	45.3	54.7	100
Lack of adequate water resources information	63	74	137	46.0	54.0	100
Collapsed water resources monitoring system	24	113	137	17.5	82.5	100
Encroachment of water conservation areas	86	51	137	82.8	37.2	100
Weak community participation and coordination	83	54	137	60.6	39.4	100
Inadequate financial resources for WRUA operations	108	29	137	78.8	21.2	100
Lack of adequate facilities and tools	106	31	137	77.4	22.6	100
Limited knowledge and skills	47	90	137	34.3	65.7	100
No incentives for WRUA officials	69	68	137	50.4	49.6	100
WRUAs lack skills and management capacity	31	106	137	22.6	77.4	100

Table 4.23 reveals the key project management challenges that are experienced in Mount Kenya catchment area including: encroachment of water conservation areas (wetlands, river banks and springs), inadequate financial resources, lack of adequate facilities and tools, weak community participation and coordination in catchment conservation and management and lack of incentives for WRUA officials who volunteer. This implies that unless the respondents address the issues adequately, they may continue to influence water resources management negatively with far reaching social, economic and environmental consequences.

4.7 The Influence of Financial Resources Management Capacity on Water Resources Management

This section provides the findings on the financial management skills training, experiences, financial management systems and understanding and use of financial reference documents.

4.7.1 The Financial Resources Management Training

The respondents were requested to state whether they have attended financial resources management training after being elected as a WRUA official.

The respondent's attendance of financial resources management training is presented in Table 4.24

Table 4.24

Attendance of financial management training since being elected a WRUA official

Training attendance	(f)	%
Yes	122	89.0
No	15	11.0
Total	137	100.0

Table 4.24 shows that 89% of the respondents have attended financial resources management training since being elected as WRUA officials. This implies that they have acquired necessary basic skills and assumed to have the competency to manage WRUA finances.

The WRUA leadership's period of financial management training is presented in Table 4.25

Table 4.25***The respondents' period of financial management training***

Period of training	(f)	%
Over 4 weeks	3	2.2
3-4 weeks	4	2.9
1-2 weeks	12	8.8
1 week	57	41.6
Less than 1 week	61	44.5
Total	137	100.0

Table 4.25 demonstrates that 86.1% of the respondents were trained for a period of one week or less. This means that the training received was certainly short.

The topics covered during the financial management training are presented in Table 4.26.

Table 4.26***Topics covered during the financial management training***

Topics covered during training	(f)			%		
	Yes	No	Total	Yes	No	Total
Financial reporting	55	82	137	40.1	59.9	100
Accountability and transparency	59	78	137	43.1	56.9	100
Rules for handling donor funds	51	86	137	37.2	62.8	100
Rules and responsibilities of WRUA officers	50	87	137	36.5	63.5	100
Financial records and documentation	81	56	137	59.1	40.9	100
Procurement of goods and services	71	66	137	51.8	48.2	100
Making payments	53	84	137	38.7	61.3	100
Expenditure control	44	93	137	32.1	67.9	100
Risk analysis and mitigation	28	109	137	20.4	79.6	100
Financial audits/monitoring	55	82	137	40.1	59.9	100
Any other topic	42	95	137	30.7	69.3	100

Table 4.26 reveals that the training received was limited. On average 39 % of the respondents trained in all the key topics. However, majority of them were trained in a) financial records and documentation and b) procurement of goods and services. This implies that a number of the respondents were not trained on key financial management topics including: financial reporting, accountability and transparency, rules for handling donor funds, rules and responsibilities of WRUA officers, making payments, financial audits/monitoring, risk analysis and mitigation.

4.7.2 WRUAs financial management systems

The financial management systems used by WRUAs are presented in Table 4.27.

Table 4.27

Existing WRUAs financial management systems

Topics covered during training	(f)			%		
	Yes	No	Total	Yes	No	Total
Generates sufficient income to continue operations uninterrupted throughout the year	23	114	137	16.8	83.2	100
Has internal source of cash or ready access to cash in times of shortfall	22	115	137	16.1	83.9	100
Retains a positive cash balance (surplus) at the end of the year	13	124	137	9.5	90.5	100
WRUA has accumulated surpluses/sufficient to cover the current year deficit	7	130	137	5.1	94.9	100
Has established (plans to establish) an operating reserve fund to finance growth and cash shortfalls	30	107	137	21.9	78.1	100
The executive committee holds themselves responsible for the financial stability of WRUA	49	88	137	35.8	64.2	100
The executive committee members have financial management skills	78	59	137	56.9	43.1	100
Finance sub-committee, procurement sub-committee, monitoring sub-committees set up and operational independently	62	75	137	45.3	54.7	100
Any other topic	11	126	137	8.0	92.0	100

Table 4.27 demonstrate that majority of WRUAs do not have appropriate financial management systems at. It shows that WRUAs have made it mandatory for the elected WRUA executive committee members to have basic financial management skills at 56.9%. From these findings it is clear that majority of the respondents lack the necessary financial resources management skills and lack clear financial management systems. With these limitations, the WRUA leadership lacks the skills required to manage water resources management effectively and efficiently.

4.7.3 Financial Documents and Basics

The financial basics and documents used by WRUAs are presented in Table 4.28.

Table 4.28

Financial Documents used by WRUAs

Financial reference documents used by WRUAs	(f)			%		
	Yes	No	Total	Yes	No	Total
Financial management procedures/guidelines	64	23	137	46.7	53.3	100
Procurement procedures/guidelines	74	63	137	54.0	46.0	100
Financial record keeping (or bookkeeping)	106	31	137	77.4	22.6	100
Annual operating budget	57	80	137	41.6	58.4	100
Financial statements	92	45	137	67.2	32.8	100
Financial reports	93	44	137	67.9	32.1	100
Annual financial audit reports	57	80	137	41.6	58.4	100
Any other	9	128	137	6.6	93.4	100

Table 4.28 indicates that majority of the WRUAs use financial records (or bookkeeping), financial reports and financial statements. This implies that a number of WRUAs are lacking key financial reference documents like financial management procedures/guidelines, annual operating budget and annual audit reports. The gap means they do not have financial management procedures/guidelines, no budget and no financial audits are carried out which may lead to financial mismanagement and lack of transparency and accountability.

4.7.4 Sources of WRUA funding

The sources of WRUA funding are presented in Table 4.29.

Table 4.29

Sources of WRUA funding

Sources of WRUA funding	(f)			%		
	Yes	No	Total	Yes	No	Total
Grants from government and government agencies	65	72	137	47.4	52.6	100
Fees charged on services provided	59	78	137	43.1	56.9	100
Membership registration and subscription	18	119	137	13.1	86.9	100
Donor contributions	72	65	137	52.6	47.4	100
Sales of goods/services	2	135	137	1.5	98.5	100
Contribution in kind	78	59	137	56.9	43.1	100
Building alliances and partnerships	11	126	137	8.0	92.0	100
Any other	20	117	137	14.6	85.4	100

Table 4.29 shows that WRUAs in Mount Kenya region have limited sources of funding. Only 56.9% funding comes from contribution in kind (in form of materials and time) and 52.6% from donor gifts and contributions. The amount of financial resources mobilized from these sources is limited and can only meet a small portion of their annual financial requirement. This implies that most WRUAs lack of sufficient funds to support their operations.

4.7.5 The Responsibility for handling WRUA finances

The officials responsible for handling WRUA finances are presented in Table 4.30.

Table 4.30

Responsibility for handling WRUA finances

Responsibility for handling WRUA finances	(f)	%
Treasurer	66	48.0
Secretary	34	25.0
Chairman finance sub-committee	25	18.0
Assistant secretary	9	7.0
Others	3	2.0
Total	137	100.0

Table 4.30 reveals that 66% of WRUAs have given the Treasurer and Chairman Finance sub-committee full mandate to handle WRUA finances as per their constitution. They may need more training on financial management. However, the Secretary and Assistant Secretary whose mandate is to do administrative work of the WRUA (handling correspondences, custodian of records, take minutes of meetings, communicate to members etc.) are now handling finances in some WRUAs. This implies that the Treasurer and Chairman Finance sub-committee of these WRUAs may be lacking relevant skills which are available with the Secretary and Assistant Secretary. The situation is likely to demoralize them and cause conflicts among WRUA officials.

4.7.6 Financial management challenges

The financial management challenges WRUAs are experiencing are presented in Table 4.31

Table 4.31

The financial management challenges WRUA are experiencing

The financial management challenges WRUA are experiencing	(f)	%
Insufficient funds to cover WRUA operational costs	83	60.6
Lack of accountant/accounting skills/financial management skills/ Lack of proper training	30	21.9
Stakeholders delay monthly contributions, CBO's do not renew registration	13	9.5
Lack of office, office materials and facilities	5	3.6
No income generating activities	2	1.5
Conflicts travelling to the sight	1	0.7
Elected leaders are very busy	1	0.7
Lack of involvement of sub-committees, higher offices issue permits before referring clients to WRUAs	1	0.7
TOTAL	137	100.0

Table 4.31 reveals that 60.6% of the respondents have insufficient funds for operational costs followed by lack of accounting and financial management skills at 21.9%. This fact is also confirmed by Table 4.15. This means that WRUAs lacking financial resources for activities are inactive and lack of financial management skills which may lead to mismanagement of the available scarce financial resources, affecting water resources management negatively.

4.8 Discussion of the Study Findings

This section of the report subjects the study findings to the existing body of knowledge in the area under study.

4.8.1 The Influence of Strategic Leadership skills on Water Resources Management in Mount Kenya region

The study established that majority of the respondents at 86.1% had the necessary level of school education, training and had also gained the necessary experience having been members and leaders of WRUAs for considerable periods. They had also gained extra experience by being leaders in other sectors in their communities. The study findings agree with Spendlove (2007) that leaders who have higher competencies in the core areas are likely to be more effective and competency can be gained through education, training and experience. The study findings also agree with Marturano, A.,(2004) that organizations requires leadership skills such as the ability to obtain results, to control through structures and processes, to solve problems, to plan and organize, and work within the structures and boundaries of the organization.

4.8.2 The Influence of Interpersonal Skills on Water Resources Management in Mount Kenya region

The study established that majority of the respondents experienced water related conflicts in the past 12 months as they lacked skills to manage and mitigate conflicts and were not able to use the existing community-level structures. The respondents have also experienced inadequate enforcement of existing water resources rules and regulations making conservation and management of water resources in Mount Kenya region tough. The study findings agree with Gilley, McMillan, and Gilley (2009) that for effective organizational change to occur a leader must have different skills or behaviors e.g. ability to motivate, communicate, and build teams. The study findings also agree with Myron R. (2007) that relationships is a must and leaders must remember that people need each other and that relationships insures that all needs within the relationship are met.

4.8.3 The Influence of Project Management skills on Water Resources Management in Mount Kenya region

The study established that majority of the respondents had received the necessary training and experiences enabling them to implement several projects in the last 12 months. The study also revealed that some of the respondents had demonstrated good supervisory skills with the World Bank funded Natural Resources Management projects where they were actively involved in implementation. With this background information, the respondents have been successful in implementing water resources conservation and management projects and have a great potential to do more. The study findings agrees with Bienzle H. (2001) that a project coordinator must have competencies in experience and knowledge in project management, negotiation skills, commitment to project work, ability to manage complex structures and situations, communication skills, leadership ability and ability to cope with pressure.

4.8.4 The Influence of Financial Resources Management Capacity on Water Resources Management in Mount Kenya region

The study established that majority of the respondents have not been trained on key financial management areas including financial reporting, accountability, transparency, rules for handling donor funds, roles of WRUA officers, making payments, financial audits, risk analysis and mitigation. The study also established that majority of WRUAs do not have appropriate financial management systems and financial reference documents are not in place. At the same time WRUAs in Mount Kenya region are experiencing lack of sufficient funds for their operations, making it difficult for the respondents to manage water resources in the catchment area. The study findings agree with TCC Group (2010) that organizational leadership needs to have financial management competency to manage organizational resources as well as have the capacity to ensure efficient financial operations.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1: Introduction

This Chapter provides a summary of findings, conclusion and recommendations drawn from the study.

5.2: Summary of the Findings

This section provides a summary of key findings from the study arranged per variable.

5.2.1 Influence of Strategic Leadership skills on Water Resources Management in Mount Kenya region.

Majority of the respondents at 86.1% had the necessary level of school education, training and had gained the necessary experience having been members and leaders of the WRUAs for considerable periods. They had also gained extra experience by being leaders in other sectors in their communities. With this background the WRUA leadership in Mount Kenya region has been able to manage water resources without undue difficulties.

5.2.2 Influence of Interpersonal Skills on Water Resources Management in Mount Kenya region.

Majority of the respondents at 62% experienced water related conflicts in the past 12 months as they lacked skills to manage and mitigate conflicts. The study clearly shows they were not investing in strengthening relationships among various actors and were not able to take advantage of the existing community-level structures comprising of community elders, local government representatives and WRUA sub-committees dealing with conflicts. The WRUA leadership has also experienced inadequate enforcement of existing water resources rules and regulations making conservation and management of water resources in Mount Kenya region tough.

5.2.3 Influence of Project Management skills on Water Resources Management in Mount Kenya region.

The respondents had received the necessary training and experiences enabling them to implement several projects in the last 12 months. The study also revealed that some WRUA leaders have demonstrated good supervisory skills with the World Bank funded Natural Resources Management project where they were

actively involved. However, there is need to continue building their capacity to deal with challenges they are facing in implementing water catchment conservation projects. With this background the WRUA leadership in Mount Kenya region has been successful in implementing various water resources conservation and management projects and has a great potential to do more.

5.2.4 Influence of Financial Resources Management Capacity on Water Resources Management in Mount Kenya region.

Majority of WRUA leadership have not been trained on key financial resources management capacity areas including financial reporting (59.9%), transparency and accountability (65.9%), rules for handling donor funds (62.8%), roles of WRUA officers (63.5%), making payments (61.3%), financial audits (67.9%), risk analysis and mitigation (79.6%) and financial audits/monitoring (59.9%). The study also established that majority of WRUAs do not have appropriate financial management systems, financial reference documents are not in place and WRUAs are experiencing lack of sufficient funds for their operations. This situation has made it difficult for them to manage water resources in Mount Kenya region.

5.3 Conclusion of the Study

The WRUAs have managed to bring community members and different stakeholders together to focus on water resources management in Mount Kenya region. The WRUA leadership had the necessary strategic leadership skills and project management skills that has influenced water resources management positively. On the other hand, lack of the necessary interpersonal skills of WRUA leadership and limited financial resources management skills has made water resources management difficult. The situation demands technical support and capacity building of the WRUA leadership that will ensure proper management, conservation, utilization and regulation of water resources in often very innovative ways. This will lead to effective water resources management which is crucial for Kenya's sustainable economic growth and poverty reduction.

5.4 Recommendations

This section provides recommendations to the policy makers for improvement and suggestions for future research work based on the findings and conclusions generated from the study.

5.4.1 Recommendations to Policy Makers

Based on the findings of this study, it is recommended that:

- a) The Kenya national Government and Kenya County Governments establish a sustainable financing mechanism where WRUAs can access funds for operations and water resources conservation and management activities at the catchment level.
- b) The Ministry of Environment Water and Natural Resources and Water Resources Management Authority should review the mandate of WRUAs through relevant policies to tackle institutional and operational weaknesses so as to improve performance and ensure long-term WRUA sustainability.
- c) The Water Resources Management Authority should facilitate development of WRUA Operations Manual that will clearly define how WRUAs will be formed, governance and leadership benchmarks, roles and responsibilities of officials, constitutions, business/strategic plans development, capacity strengthening and the means through which they will operate and achieve desired objectives.
- d) WRUAs should fast track the development of Water Allocation Plans and Sub-Catchment Management Plans for each sub-catchment area in Mount Kenya region to ensure proper management, conservation, use and control of water resources.

5.4.2 Recommendations for Further Research

Based on the findings of this study, further research is recommended in the following areas:

- a) Determine the issues constraining the performance of government agencies responsible for enforcing water rules and regulations and give appropriate recommendations.
- b) Conduct a comparative research to identify the major factors that hinder women's participation and control over water resources in Kenya.
- c) Conduct a similar research in Lake Victoria and Rift Valley regions because of their social, environmental and economic importance to the people of Kenya.

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APPENDICES

APPENDIX 1: IN-DEPTH INTERVIEW SCHEDULE

PART I: WATER RESOURCES MANAGEMENT

1. What water resources management issues are you facing in your catchment area? How are you addressing them? Share best practices in water resources management in your catchment area?
2. Give critical challenges hindering your WRUA performance (maximum of five).
Give two priority recommendations on how WRUA leaders can be helped to improve their performance.

PART II: STRATEGIC LEADERSHIP SKILLS

3. How the WRUA leadership was elected into office. What structures are in place to ensure that the WRUA leadership is accountable to stakeholders and clients? How can you rate the WRUA services delivered to clients?
5. What competencies are available in the current WRUA leadership? What competencies are lacking? What support should they be provided in order to deliver their mandate?
6. What plans and activities are the WRUAs involved in? How do WRUA members and stakeholders participate in developing and implementing this plans and activities?

PART III: INTERPERSONAL SKILLS

7. How can you describe the working relationship among the WRUA leaders and Members? If you are not satisfied with their performance? What strategies should be put in-place to ensure the WRUA leadership is strengthened and working well with members and stakeholders?
8. What type of water related conflicts have you experienced within the WRUA and the catchment area? What mechanisms exist in mitigating conflicts? How can the mechanisms be strengthened?

PART IV: PROJECT MANAGEMENT SKILLS

9. What projects has the WRUA implemented successfully in the last twelve (12) months (January-December 2012)? What key challenges has the WRUA experienced during the implementation of various projects in the catchment area?
10. Do you consider the current leadership technically qualified to handle the WRUA business? How can the situation be improved?

PART V: FINANCIAL RESOURCES MANAGEMENT CAPACITY

11. How the WRUAs generate sufficient income to continue operations uninterrupted throughout the year. What are the sources of the WRUA finances? What systems are in place to ensure prudent management of the finances? Who handles the WRUA finances? Have you experienced mismanagement more recently? Suggest ways how financial mismanagement can be overcome in future?

APPENDIX 2: RESEARCH STUDY QUESTIONNAIRE

(To be filled by WRUA Leaders : Chairperson, Secretary, Treasurer, others)

INTRODUCTION AND SEEKING CONSENT:

Hello, my name is Isaboke Evans Monene, a Masters student of the University of Nairobi University. I am conducting a Research Survey on the Leadership Competency of Water Resource Users Association in Mount Kenya Region covering Embu, Nyeri, Muranga and Kirinyaga counties. Your WRUA is one of those randomly selected for this study. Your response and all those others participating in the survey, will be compiled in a research report expressing the current issues and concerns facing WRUAs, and identify development priorities for the government and other key stakeholders. Your participation will go a long way in facilitating policy formulation, improved leadership practices and improved water sector performance.

Instructions:

Do not write your name anywhere on this questionnaire. Please answer as accurately as possible all the questions. Where you are requested to quote figures, please give figures as applies to the last 12 months (January-December 2012). The information I will collect today is STRICKLY CONFIDENTIAL, and I will not record your name.

INTRODUCTION AND BACKGROUND INFORMATION

Questionnaire Code: _____

Respondent Category: 1 Chair Person 2 Secretary 3 Treasurer 4 Other (specify).....

Gender of respondent: 1 Male 2 Female

Marital Status: 1 Single 2 Married 3 Widowed 4 Divorced 5 Separated

Which age group do you belong to? 1 Under 30 2 30-39 3 40-49 4 50-59 5 Over 60

PART I: STRATEGIC LEADERSHIP

1. What is your highest level of Education?

1 None 2 Primary 3 Secondary 4 Tertiary College 5 University

2. For how many years have you been an active member of your WRUA?

1 Below 1 year 2 1-2 Years 3 3-4 Years 4 Above 4 years

3. For how many years have you been an official of your WRUA?

1 Below 1 year 2 1-2 Years 3 3-4 Years 4 Above 4 years

4. Were you elected through an organized election? 1 Yes 2 No

If yes, who supervised the election? List a maximum of three:

1.....2.....3.....

List the qualification or criteria used by the supervisor during the election to a maximum of five

- 1
- 2
- 3
- 4
- 5

5. What other tasks are you actively engaged in your community?
 1 SHG/CBO/NGO leader 2 local Community leader 3 Community service volunteer
 4 Politician 5 Civil servant/Teacher 6 Entrepreneurship 8 None

6. Tick your best four competencies from the following list
 1 Communication
 2 Working with people
 3 Problem solving
 4 Relational Skills
 5 Conflict resolution
 6 Project management
 7 Interpersonal skills
 8 Strategic Leader
 9 Financial management
 10 Visionally
 11 Training and coaching
 12 Any other (specify).....

7. Rate yourself in each of these competencies as low, medium or high by ticking

Competencies	High	Medium	Low
1 Communication			
2 Team worker/working with people			
3 Problem solving			
4 Relational Skills			
5 Conflict resolution			
6 Project management			
7 Interpersonal skills			
8 Strategic Leader			
9 Financial management			
10 Visionally			
11 Training and coaching			

8. Have you attended any leadership training since your election as a WRUA official? 1 Yes 2 No

If yes, list the topics covered during the training to a maximum of five.
 1
 2
 3.....
 4
 5

9. How long was the training? Tick the appropriate duration
 1 Less than 1 week 2 I week 3 1-2 weeks 4 3-4 weeks 5 Over 4 weeks

10. Which of the following documents are available and in use in your WRUA? Tick your appropriate answers.
 1 WRUA Vision and Mission statement
 2 Water Act 2002
 3 Water Resources Management Rules,2007
 4 Water Allocation plan
 5 Sub-Catchment management plan
 6 WRUA Constitution
 7 Procurement procedures
 8 Rules and Procedures of Handling funds
 9 Visitors book
 10 Minutes recording book

- 11 Cash book
- 12 Cheque book
- 13 Any other (specify).....
- 14 None

PART II: INTERPERSONAL SKILLS

11. Has your WRUA experienced water related conflicts in the last twelve (12) months (January-December, 2012)?	1 Yes 2 No
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12. What WRUA mechanisms exist to manage and mitigate conflicts? Tick appropriate answers from the following list:

- 1 Take steps to prevent counterproductive confrontations
- 2 Take steps to prevent potential situations that could result unpleasant confrontations
- 3 WRUA internal sub-committee
- 4 Use of local community leaders/local government
- 5 Encourage creative tension and differences of opinion
- 6 Any other (specify)
- 7 None

13. How is the WRUA leadership strengthening its relationship with members/stakeholders? Tick the appropriate answers:

- 1 Organize common activities periodically
- 2 Hold consultative meetings regularly
- 3 Organize membership education/open days
- 4 Visit the members/stakeholders
- 5 Maintain regular communication through calls and letters
- 6 Takes responsibility to build and maintain positive relationships and value opinion of others
- 7 Any other (specify)
- 8 None

PART III: PROJECT MANAGEMENT SKILLS

14. What projects did the WRUA implement in the last twelve (12) months (January-December 2012)? Give your priority list to a maximum of five.

- 1 Abstraction surveys
- 2 Development and implementation of Water allocation plans
- 3 Pegging the river line
- 4 Wetlands restoration
- 5 Pollution control along rivers and tributaries
- 6 Establishment of tree nurseries
- 7 Tree planting
- 8 Constructing soil and water conservation structures (terraces, gabions, check dams, etc)
- 9 Enforcement of the law (The Water Resources Management Rules, 2007).
- 10 Public education and awareness creation on water catchment management and protection
- 11 WRUA Management committee training/capacity building
- 12 Water infrastructure development and rehabilitation (roof catchment, borehole drilling, shallow wells, earth dams, sand dams, etc).
- 13 Poverty reduction through implementation of livelihood activities
- 14 Fundraising and resource mobilization through proposal writing
- 15 Monitoring and information gathering
- 16 Any other (specify).....
- 17 None

15. What projects is the WRUA implementing in the current year (January-December 2013)? Give your priority list to a maximum of five.

1
2
3
4
5.....

Have you had training on Project management since your election as a WRUA official?	1 Yes 2 No
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If yes, how long was the training? Tick the most appropriate answer.

1 Less than 1 week 2 I week 3 1-2 weeks 4 3-4 weeks 5 Over 4 weeks

16. What topics did you cover during the training? Tick the most appropriate.

- 1 Managing people/working with people
- 2 Proposal writing
- 3 Fundraising and external relations
- 4 Financial management
- 5 Project implementation
- 6 Conducting studies and survey
- 7 Community mobilization
- 8 Strategic planning
- 9 Monitoring and Evaluation
- 9 Report writing
- 10 Any other (specify).....
- 11 None

PART IV: FINANCIAL RESOURCES MANAGEMENT

17. Have you had training on financial management since your election as a WRUA official?	1 Yes 2 No
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If yes, how long was the training? Tick the most appropriate answer from the list below:

1 Less than 1 week 2 I week 3 1-2 weeks 4 3-4 weeks 5 Over 4 weeks

18. What lessons or topics did you cover during the training? Tick the most appropriate answer from the list.

- 1 Financial reporting
- 2 Accountability and Transparency
- 3 Rules for Handling donor funds
- 4 Roles and Responsibilities of WRUA officers and sub-committees
- 6 Financial Records and Documentation
- 7 Bank Account operations and management
- 8 Procurement of Goods and Services
- 9 Making Payments
- 10 Expenditure Control
- 11 Risk Analysis and Mitigation
- 12 Financial Audits/monitoring
- 13 Any other (specify).....
- 14 None

19. Solid financial management plays a critical role in the development and maintenance of an effective WRUA. Which one of the following describes your WRUA? Tick the most appropriate answer(s).

1. Generates sufficient income to continue operations uninterrupted throughout the year
- 2 Has internal source of cash or ready access to cash in times of shortfall
- 3 Retains a positive cash balance (surplus) at the end of the year
- 4 WRUA has accumulated surpluses sufficient to cover the current year deficit.
- 5 Has established (plans to establish) an operating reserve fund to finance WRUA growth activities
- 6 The executive committee holds themselves responsible for the financial stability of the WRUA
- 7 The executive committee members have financial management skills
- 8 Finance sub-committee, Procurement sub-committee, monitoring sub-committees have been set up and operates independently

9 Any other (specify).....
10 None

20. Which financial basics and documents are available and in use in your WRUA?
1 Financial management procedures/guidelines
2 Procurement procedures/guidelines
3 Financial record keeping (or bookkeeping)
4 Annual operating budget
5 Financial statements
6 Financial reports
7 Annual financial audit reports
8 Any other (specify).....
9 None

21. Which are the sources of your WRUA funding? Tick the most appropriate.
1 Grants from government and government agencies
2 Fees charged on services provided
3 Membership registration and subscription
4 Donor contributions
5 Sales of goods/services
6 Contribution in-kind
7 Building alliances and partnerships
8 Any other (specify).....
9 None

22. Who is directly responsible for handling finances in your WRUA? List to a maximum of five on priority.
1
2
3
4
5

23. What are the common financial management challenges your WRUA has been experiencing? List to a maximum of five.
1
2
3
4
5

PART V: GENERAL QUESTIONS

24. What water resources management issues are you facing in your catchment area? Tick the most appropriate answer(s).

- 1 Scarcity of water for various uses
- 2 Conflicts over water due to increasing demand
- 3 Weak enforcement of water resources regulations
- 4 Deteriorating water quality due to increasing pollution sources
- 5 Lack of adequate water resources information
- 6 Collapsed water resources monitoring system
- 7 Encroachment of water conservation areas such as wetlands, river banks and springs
- 8 Weak community participation and coordination
- 9 Inadequate financial resources to ensure sustainable management of water resources
- 10 WRUA lacks adequate facilities and tools to ensure efficient water resources conservation and management
- 11 Limited knowledge and skills on water resources management
- 12 Lack of incentives for WRUA officers who are volunteers
- 13 WRUA lacks skills and management capacity
- 14 Any other (specify).....
- 15 None

25. Which are the best practices in water resources management in your catchment area? Tick the most appropriate answer(s).

- 1 WRUAs have been gender mainstreamed
- 2 Established partnerships with the private sector
- 3 Strengthened collaboration with government institutions
- 4 Involvement of relevant NGOs, CBOs and other interested groups
- 5 Increased community participation
- 6 Empowerment of stakeholders
- 7 Sound governance structure of the WRUA
- 8 Intensified water management and conservation activities
- 9 Any other (specify).....
- 10 None

26. How many catchment management plans have been developed in your area?

Who are your key partners/stakeholders in sub-catchment management plans implementation
.....
.....

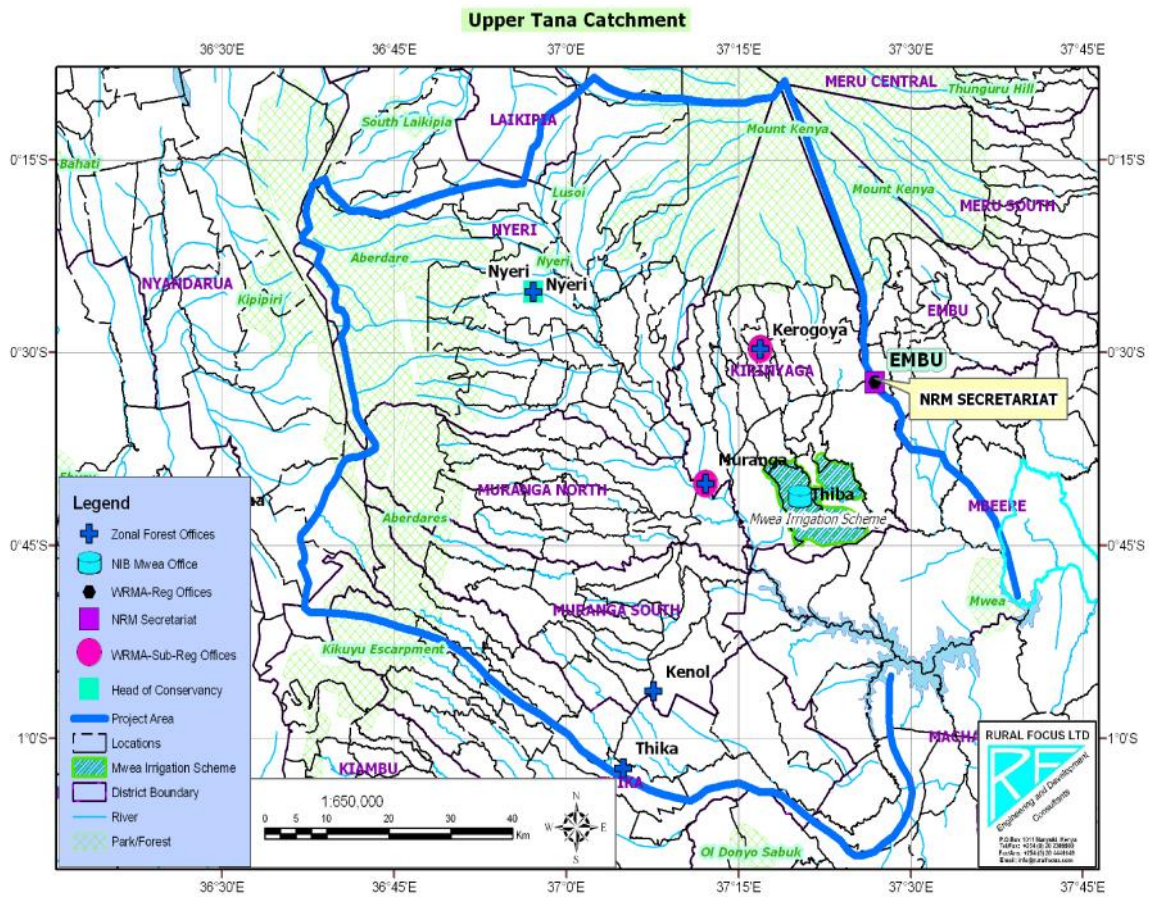
27. Give two critical challenges hindering your WRUA operations.

- 1
- 2

28. Give two priority recommendations on how WRUAs can be helped to improve performance.

- 1
- 2

APPENDIX 3: THE MAP OF MOUNT KENYA STUDY REGION



Major river basins or sub-catchment areas covered by the study is within the blue line

APPENDIX 4: STUDY POPULATION DISTRIBUTION

Nyeri County WRUAs	Muranga County WRUAs	Kirinyaga County WRUAs	Embu County WRUAs
<ul style="list-style-type: none"> • Thegu • Ragati • Chania • Nairobi • Chinga • Rwarai • Thiha • Gura • Honi • Sagana • Lower chania 	<ul style="list-style-type: none"> • Kayahwe • Saba • North Mathioya • South Mathioya • Thika • Githanja • Thika upper • Maragua 	<ul style="list-style-type: none"> • Upper Nyamindi • Lower Nyamidi • Kamweti • Upper Thiba • Lower Thiba • Mukengeria • Rutui • Kiringa • New kandakame • Kamuthiga • Rwarucaka • Kangaita • Lower Rwamuthambi • Kakinya • Gatondo • Icakimangu • Kiiye 	<ul style="list-style-type: none"> • Rupingazi • Kapingazi • Thambana • Nyanjara • Upper Ena • Lower Ena • Kanjari • Kirurumwe • Gachunguri • Kiang'ombe • Kiambere • Wachoro • Kawango • Mambo • Kiiriri