FACTORS INFLUENCING SUSTAINABILITY OF DONOR FUNDED PROJECTS: THE CASE OF WATER AND SANITATION PROJECTS IN LAIKIPIA EAST DISTRICT, LAIKIPIA COUNTY, KENYA

BY

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THIS RESEARCH PROJECT REPORT IS SUBMITTED FOR EXAMINATION IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN PROJECT PLANNING AND MANAGEMENT OF THE UNIVERSITY OF NAIROBI

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DECLARATION

This research project report is my original work and has not been submitted for examination to any other university.

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DEDICATION

To my dear wife, Rose Nyaguthii, my daughter Faith Wanjiku and son Eugene Njuguna for their support and encouragement that has always inspired me to work hard with determination in life.

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LIST OF ABBREVIATIONS ANDACRONYMS

CRWRC	Christian Relief World Resource Committee
DAC	Development Assistance Committee
IFAD	International Fund for Agricultural Development
INGOs	International Nongovernmental Organizations
MoW	Ministry of Water
NGO	Non Governmental Organizations
NWCPC	National Water Conservation and Pipeline Corporation
SPSS	Statistical Package for the Social Sciences
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WRMA	Water Resource Management Authority

ABSTRACT

Water plays a significant role in all realms of the human development and provision of clean and adequate water as universally provided in the Millennium Development Goal remain a key challenge to governments and development partners. To realize this goal of providing adequate and clean drinking water, sustainable measures have to be put in place by the service providers. The study therefore sought to establish factors influencing sustainability of water and sanitation of donor funded projects in Laikipia East District. The study was guided by four objectives that is to assess how institutional capacity influence sustainability of water and sanitation donor funded projects; to establish how beneficiary participation influence sustainability of water and sanitation donor funded projects; to determine how project management skills influence sustainability of water and sanitation donor funded projects and to examine how project monitoring influence sustainability of water and sanitation donor funded projects. Descriptive survey design was employed to gather information from a sample size of 194 respondents and 2 key informants from the Ministry of Water and Irrigation. The study population constituted of the household water consumers and officers from Ministry of Water and Irrigation. The study used a combination of both probability and non-probability sampling techniques. The respondents were reached through household survey while key informants were identified purposively. This study collected quantitative data using a questionnaire from the respondents and an interview guide from the key informants. The data was analyzed using descriptive statistics generated from statistical tools (SPSS V.17.0). The study concluded that; water projects had the capacity to deal with project related issue despite most projects failing to train the members. Most of the water projects had the capacity to sustain their projects financially. Members of the water projects participated in cost sharing through payment of water user charge. Project members participated towards the implementation, maintenance and management of the water projects. Beneficiary's participation contributed to the sustainability of water projects through enhancing project ownership, completion of projects in time and through ensuring timely repair and maintenance of the projects. Projects had in place water management committee which was active and responsive to the needs of the members. Water projects had employed staff with requisite water management skills which greatly influence sustainability of the projects. Project sustainability was enhanced by presence of project monitoring system which the projects had adopted. Projects held regular (on a quarterly basis) project monitoring meetings which involved the members. Regular project monitoring ensures project sustainability though helping the project in future planning at the same time enabling the projects solve water related conflicts, it also enhanced project timely maintenance and repair, equitable distribution of water and better utilization of project water. The study recommended that, there is a need to create awareness to the project members on general issues concerning the water projects. Project vision and mission should form an integral part of the awareness. The study also recommended that, members of the projects should be included in the determination of the strategic direction of the project. It also recommended that water management committees should be trained on all aspects of project management in relation to water projects e.g. financial management, procurement, operations, tariff setting and record keeping. It also recommended that, projects should adopt basic but comprehensive monitoring system for capturing and storing the project's information to inform the project management and for future reference.

CHAPTER ONE

INTRODUCTION

1.1Background of the study

Water supplies and sanitation were first high-lighted on the development agenda about 30 years ago. This was a result of the 1977 United Nations Conference in Mar del Plata, Argentina that recommended proclaiming the 1980s to be the International Drinking Water Supply and Sanitation Decade with the goal of "providing every person with access to water of safe quality and adequate quantity, along with basic sanitary facilities, by 1990" (World Water Assessment Programme, 2003). Despite this, over 783 million people in the world are still without access to improved water sources, and even more are without access to consistently safe drinking water not withstanding water being at the center of economic and social development; it is vital to maintain health, grow food, manage the environment, and create jobs while 2.5 billion people globally live without access to improved sanitation (World Bank, 2013).

300 million people in Africa do not have access to safe drinking water while 313 million have no access to sanitation. That means Africa has the lowest total water supply coverage of the other continents in the world (African Development Fund, 2005). Poor sanitation pose great development challenges to most of the countries, as it impacts public health, education, and the environment. Globally, poor sanitation leads to about 700,000 premature deaths annually and leads to economic losses are mainly driven by premature deaths, the cost of health care treatment, lost time and productivity seeking treatment, and finding access to sanitation facilities (World Bank, 2010).

According to WHO and UNICEF report about Kenya's water and sanitation situation, 59 % (83% in urban areas and 52% in rural areas) had access to drinking water sources while 31% (27% of urban and 32% of rural) had access to private improved sanitation (WHO and UNICEF, 2013). Rural water-supply and sanitation schemes in Kenya are partially or fully funded from governmental and non-governmental resources. Many non-governmental organizations and international nongovernmental organizations (INGOs) are working in Kenya to increase coverage and to provide safe water supplies and sanitation to underserved populations in poor and remote areas (World Bank, 2013).

As shown by different studies, sustainability of community based projects is influenced by a variety of factors. Community participation, project financing, project management practices and community training do influence sustainability of community water projects (Ochelle, 2012). In her study, Mulwa (2013) points out that project planning and implementation, community management, cooperation of stakeholders and financial management influence sustainability of water supply projects (Mulwa, 2013). The study by (Odhiambo , 2010) found out that community participation, organizational setting, operating policies and community capacity building in water projects are fundamental factors which enhances project ownership, empowerment and sustainability of the projects (Odhiambo, 2010).

It is with this background that the study assessed the factors influencing sustainability of water and sanitation projects beyond donor support in Laikipia East District.

1.2 Statement of the problem

Despite safe and clean drinking water and sanitation being a human right essential to the full enjoyment of life, majority of the world's population are without access to improved water supply or sanitation services live in Africa and Asia (WHO & UNICEF, 2000). Water is life and without water, human beings cannot survive. Unfortunately, water has become a very scarce commodity in most parts in Kenya. It is estimated that more than 60% of the Kenyan population do not have access to clean water despite the fact that much of the country have reliable water sources and adequate rainfall (WHO/ UNICEF, 2011).

In Kenya, as in much of Africa, the lack of safe drinking water causes many severe problems including dehydration, starvation and disease and that at least one in every 3 children aged between 0-5 died each day due to drinking contaminated water. The daily chore of fetching water is no small task in rural Kenya, and young women often walk as far as ten miles to collect what water they can from a polluted, dirty, hand-dug well, full of parasites and bacteria. These primitive wells are also structurally dangerous and often collapse when they get deep enough (University of Nairobi and the Kenya Population Health Environment, 2007).

In Laikipia East District, water quality deteriorates during drought. The average walking distances to a water sources for both people and livestock under normal circumstances are 0-3

km, these distances rise to over 3-5 km during drought. Latrine coverage in the Sub County is about 60% .Other methods of human waste disposal include bush method and sewerage system. Liquid and solid waste disposal is by septic tanks, soak pits and open field which affect water quality through runoff and seepage. This in turn contributes to the high prevalence of water borne diseases in the district (Laikipia District Short Rains Assessment Report, 2008).

Research has shown that rural water supplies and sanitation projects in sub-Saharan Africa, often demonstrate low levels of sustainability (Gebrehiwot, 2006). The key causes for this include inappropriate policy or legislation; insufficient institutional support; unsustainable financing mechanisms; ineffective management systems; and lack of technical backstopping (Niyi et.al, 2007). Despite the immense importance of water and sanitation donor funded projects in ensuring access to clean drinking water and sanitation for all, no study has been conducted locally or internationally to establish factors influencing sustainability of community based water projects in Laikipia East District. This study therefore sought to assess the factors which influence sustainability of water and sanitation donor funded projects in Laikipia East District.

1.3 Purpose of the study

The purpose of this study was to establish the factors influencing sustainability of water and sanitation donor funded projects in Laikipia East District, Laikipia County, Kenya.

1.4 Objectives of the study

This study was guided by the following research objectives:

1. To assess how institutional capacity influence sustainability of water and sanitation donor funded projects.
2. To establish how beneficiary participation influence sustainability of water and sanitation donor funded projects.
3. To determine how project management skills influence sustainability of water and sanitation donor funded projects.
4. To examine how project monitoring influence sustainability of water and sanitation donor funded projects

1.5 Research questions

This study sought to answer the following research questions

1 How does institutional capacity influence sustainability of water and sanitation donor funded projects?
2 To what extent does beneficiary's participation influence sustainability of water and sanitation donor funded projects?
3 How does a project management skill influence sustainability of water and sanitation donor funded projects?
4 How does project monitoring influence sustainability of water and sanitation donor funded projects?

1.6 Significance of the study

The research discussed factors that influence sustainability of donor funded projects which may lead to collapse of such projects or lack of attainment of the full intended benefits to the beneficiaries. As a result, the findings of this research may benefit the management and beneficiary of these projects in Laikipia East District in particular and by extension to other similar projects in Kenya. The study results may also be of help to the government in policy formulation and also to the health practitioners in determining their programming priority.

The donors, implementing partners and the benefiting communities may benefit from the lessons learnt from this research thus enabling them to address project sustainability challenges and enable them plan better for future projects. Again, the research may add value to the body of knowledge and understanding of project sustainability. This may be beneficial to researchers who may want to research more on this area.

1.7 Assumptions of the study

The study was based on the assumptions that the respondents would be available and cooperative.

1.8 Limitations of the study

The vastness and remoteness of the study area posed a mobility and time challenge during collection of data. The researcher overcame this by engaging research assistants who assisted in data collection.

1.9 Delimitations of the study

The study was confined to water and sanitation donor funded projects in Laikipia East District Laikipia County only. The selected stakeholders included household water

consumers and key ministry of Water and Irrigation officers. The area was selected because there is concentration of water projects funded by donors in the sub county and the area is classified as a water scarce region characterised by perennial drought and low annual precipitation. This region therefore possesses the characteristics that the researcher wanted.

1.10 Definition of significant terms used in the study

Beneficiary participation: This is a voluntary contribution by the people in one or another of the community programmes supposed to contribute to their welfare.

Sustainability of donor funded projects: The continuing ability of a project which have received funding from a donor to meet the needs of its community and embraces the concept of doing this beyond the time of donor agency involvement.

Institutional capacity: Is the ability or potential to mobilize resources and achieve objectives. It is everything necessary to construct the relationships required to achieve an organization's vision, mission, and goals.

Project Management skills: Refers to using expertise in coordinating the efforts of people to accomplish desired goals and objectives for a project using available resources efficiently and effectively. It comprises planning, organizing, staffing, leading or directing, and controlling an organization or effort for the purpose of accomplishing a goal.

Project monitoring: This is supervising project activities in progress to ensure they are on-course and on-schedule in meeting the objectives and performance targets.

1.11 Organization of the study

Chapter One comprised the background of the study, statement of the problem, purpose of the study, objectives, research questions, and significance of the study, basic assumptions, limitations, delimitations and definition of significant terms used in the study. Chapter Two covered the introduction and the body of the study where specific themes were discussed, theoretical framework, related empirical literature as well as the conceptual framework. Chapter Three contained the following: research design, target population, sampling procedure, research instruments, validity and reliability of the instruments and data analysis. In Chapter Four, the areas of focus were: data analysis and interpretation and presentation while Chapter Five presented the study summary, conclusions, recommendations and areas for further studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed the available literature on sustainability of donor funded projects in water and sanitation and how relevant that literature is important to the current study. It also presented gaps to be filled by the study and the conceptual framework.

2.2 Sustainability of water and sanitation for donor funded projects

Over the years, the definition of sustainability in development literature has varied widely and broadened in scope. The concept arose in response to economic growth models that characterized development approaches over the last half century. It was eventually recognized that such models did not adequately address social inequalities and led to environmental degradation. The concept gained wider use after the World Commission on Environment and Development published our common future (Brundtland 1987). According to IFAD, sustainability is defined as ensuring that the institutions supported through projects and the benefits realized are maintained and continue after the end of the project (IFAD 2007). IFAD's Office of Evaluation adds to this definition by considering resource flows. It acknowledges that assessment of sustainability entails determining "whether the results of the project will be sustained in the medium or even longer term without continued external assistance". It further expands on the concept of programme sustainability by distinguishing among several factors that either contribute to or detract from the long-term impact of IFAD interventions (IFAD, 2002).

An operational definition which permits some degree of ordinal ranking by sustainability will have to be narrow and specific. For instance, in a study of three African countries, Bowrt (1989) defined sustainability in terms of outcomes persisting at least two years after project termination; and in a comparative study of five countries in Africa and Central America (1990), he defined it as outcomes at least three years after project termination. Honadle and VanSant (1985) in a study of sustainability of integrated rural development projects, defined it in terms of "the percentage of project-initiated goods and services that is still delivered and maintained five years past the termination of donor resources." This latter definition appears empirically verifiable but in practice will be complicated by multiple outputs and lack of agreement about the verification of 'delivery" and "maintenance."

Research has shown that rural water supplies in sub-Saharan Africa, particularly those relying on hand pumps, often demonstrate low levels of sustainability. The key causes for this include inappropriate policy or legislation; insufficient institutional support; unsustainable financing mechanisms; ineffective management systems; and lack of technical backstopping. The problem will only be solved by adopting a holistic approach to planning and implementation rather than focusing on one issue (Niyi et.al, 2007). The determinant factors for the sustainability of rural water supply systems are categorized in to two main categories. These are pre implementation factors and post implementation factors. Community participation, technology selection, site selection, demand responsiveness, construction quality, population and training are some of the pre-implementation factors. And post-implementation factors are technical support, community satisfaction, institutional and financial management, training and willingness to sustain the water project (Gebrehiwot, 2006).

One of the pre implementation factors for rural water supply systems is demand responsive approach. In this context 'demand' is defined as the quantity and quality of water, where community members will choose to consume at a given price (Gizachew, 2005). In a demand responsive approach, beneficiaries should feel the need for safe drinking water supply, in order to identify safe drinking water supply projects. Water projects are more or less demand responsive to the degree that beneficiaries make choices and carry out resources in support of their choices (Gebrehiwot, 2006). If there is willingness in the community to provide valued resources in the exchange for services then these community members valued the service. As a result demand for supply of water will facilitate the management of the water supply system and it enhances the rate of sustainability of the water supply system (Gizachew, 2005).

In the last three decades, literature in the water supply sector has shown that sustainability of rural water supply structures has become positively associated with small-scale initiatives, which maintain public participation (Davis and Liyer, 2002). Involving the users in the planning, implementation, operation, protection and maintenance of water supply systems meaningfully is the key to sustainability. Community members' contributions might take the form of money, labor, material, equipment, or participation in project-related decision-making and meetings (Davis and Liyer, 2002). Over the past three decades, experience has

shown that water and sanitation activities are most effective and sustainable when they adopt a participatory approach that acts in response to genuine demand, builds capacity for operation and maintenance and sharing of costs, involve community members directly in all key decisions, develop a sense of communal ownership of the project, and uses appropriate technology that can be maintained at the village level. Also important are educational and participatory efforts to change behavioral practices (USAID, 2009).

The human body's basic water requirement depends on climate, work load and environmental factors. If the work load is high and the season is dry the family use large amount of water per day, whereas the family size increases the amount of water consumed by one person per day decreases relative to the one that small number of family sizes. However, Gleick (2006) defined the minimum requirement for human body and found that it is between 3 and 10 liters per day. The amount of water needed for other purposes, including cooking or hygiene, is more variable and depends on cultural habits, socio economic factors and types of water supply in terms of quantity, quality and availability.

2.3 Institutional capacity and sustainability of water and sanitation projects

Capacity is the ability of individuals, institutions and societies to perform functions, solve problems, and set and achieve objectives in a sustainable manner while, institutional capacity can be defined as the set of attributes related to both structural/systemic attributes and human capital/resources that, collectively, define the institution's ability to perform its mandated functions (DAC,2006). According to World Bank, institutional capacity building is the combination of human resources and institutions that permits organisations to achieve their development goals. Furthermore, it allows people to achieve the objectives they set for themselves. Institutions which lack human and institutional capacity, may be forced to rely on foreign expertise and resources to perform the elemental tasks of development therefore a need of development partners to integrate capacity building in their development agenda World Bank, 1996). Over the past several years it has become clear that institutional capacity building is central to the quest for sustainable development (UNEP, 2002). The definition of sustainability indicates that institutional capacity is an essential condition for maintaining the flow of project benefits. Institutional strengthening includes attention to structure, policy, and staff training. It has been that found that institutional change needs to be promoted as beneficial to those affected, so that they will more readily understand why they are required to change the way they conduct their business (Edwards 1988).

In the past, institutional capacity building was often considered to be a one-way phenomenon; where capacity was the prerogative of the funding organisation (Korten, 1990; Fisher, 1998). This made the receiving organisation inferior in relation to the benefactor. This hierarchical relationship implied the benefiting organisation was inferior in some way to the level above it. Institutional capacity therefore should focus on the integrative process that involves both the benefactor and the benefiting organization. Some organizations are more effective than others and the question which arise form this is why does this happen? The review of individual capacity working in organisations suggests that the effectiveness of an organization stems from the capability of the individuals which comprise that organization. This shows that, if the capacity of these individuals is harnessed, then this may translate to growth of the organisation capacity. Thus, organizational capacity is a relational process (CRWRC, 1997). It deals with how the individuals in an organisation organize themselves and how they interact with others to deliver the organisation's mission and sustain its existence for continued support to those served. Further, those organizations which are able to capitalize upon the collaborative capacity of its people are able to operate effectively (Tandon, 1988).

Leadership capability for an organisation may determine the institutional capacity of an organisation. In 1996, The Leading Clinic completed a study which attempted to measure organizational effectiveness. This study revealed that to be effective leaders of the organization must first become learners who inquire into the core capabilities of organizational capacity (Zolno, 1997). The World Bank underscored the role of institutional capacity building in poverty reduction and sustainability of community based projects. An effective poverty reduction strategy process and a productive partnership can be built only on a platform of strong public capacity: capacity to formulate policies; capacity to build consensus; capacity to implement reform; and capacity to monitor results, learn lessons, and adapt accordingly (Sahr, 2004).

Muchunguzi and Milne (1997) studied 170 community based organisations in Kenya, Tanzania, Uganda, and Zimbabwe they identified several critical components of institutional capacity: access and sharing of information, financial, educational activities, technical,

training and project management. They also contend that institutional capacity does influence sustainability of community water projects.

2.4 Beneficiary participation and sustainability of water and sanitation projects

It is widely accepted that beneficiary participation from an early stage in the project process increases project ownership. However, ongoing motivation is important for continued participation (Batchelor, Mc Kerney and Scott, 2000). Strengthening community decision making and management capacity takes a long time and as a result, community managed projects may take a longer time to implement than the projects managed by conventional agents (Evans and Appeleton, 1993). Involvement of women and other stakeholders in project cycle increases the chance of project success and sustainability (Evans and Appeleton, 1993). World Bank impact evaluation of community water supply and sanitation projects in Sri Lanka, found out that active participation by project beneficiaries at all project stages increases project sustainability (World Bank, 1998). Robert (1997) points out that participation is assumed to have the effect of empowering the citizens so that they can continue to give direction in public policies or programmes and also direct future changes and put pressure on outside forces to support these changes. He argues that the location of participatory work is thus focused on the local level and depends upon local interests and capacity to engage in action for change for the success of the public policy or programmes.

Brett (2003) presents the role of participatory theory in managing development projects and programmes in poor countries. He notes that participation has emerged in response to global demands for greater individual and social control over the activities of state and private agencies, and especially to the manifest failures of traditional 'top-down' management systems in less developed countries (LDCs). He points out that participation can succeed for specific kinds of projects and programmes in favourable circumstances, but is unsuitable for many others. It commonly fails in contexts where local conditions make co-operative and collective action very difficult, or where it is manipulated by implementing agencies to justify their own actions or poor performance. Brett (2002) also points out that participation is very instrumental for it strengthens managerial competence, motivation and performance of workers, social and political solidarity and the relative position of poor and marginal groups in society. He argues that participation empowers poor people by taking them out of exploitative economic relationships and thus gives them control over their own organizations. Participation also strengthens local organizational capabilities by building on traditional

commitments to collective, as opposed to individualistic forms of economic and social organizations. He also notes that participation guarantees that collective organizations serve local needs, are based upon local skills and compatible with local cultures and thus help to eliminate foreign domination and dependency from the development process.

Mosse (2001) in particular critiques participatory approaches to development, points out that an important principle of participatory development is the incorporation of local people's knowledge into programme planning and the supposition that the articulation of people's knowledge can transform top-down bureaucratic planning systems. He points out that the techniques of participatory learning and planning are taken as defining features of 'participation' in development (Bill Cooke & Kothari (2001). Mosse however, challenges the populist assumption that attention to 'local knowledge' through participatory learning redefines the relationship between local communities and development organizations. Using project-based illustrations while referring to the experience of the Kribhcho Indo-British Farming Project (KRIBP), a donor-funded programme of a large public sector organization in India, Mosse notes that 'local knowledge', far from determining planning processes and outcomes, is often structured by them. He for example pointed out that what in one case was expressed as a local need is actually shaped by local perceptions of what the agency in question would legitimately and realistically be expected to deliver. Mosse argues that 'participatory planning' may more accurately be viewed as the acquisition and manipulation of a new 'planning knowledge' rather than the incorporation of 'people's knowledge' by projects.

Mukandala (2005) points out that with increased participation of people in self-help projects; there was increased sense of ownership, and belonging by the local community members and also their willingness to take care of the existing projects in their respective areas. It was because of this participatory approach that the self-help movement becomes successful and later paved the way for nation-building through decentralization. Mukandal further points out that the rationale for community participation has been thought to include being a means of enhancing empowerment, enhancing responsiveness to people's real needs, instilling a sense of ownership of programmes by the local people, promoting sustainability, and making programmes cheaper by allowing mobilization of local resources. Participation is also

believed to promote more equitable distribution of the benefits that accrue from development activities.

2.5 Project management skills and sustainability of water and sanitation projects

Management of projects involves increasing the alignment of development projects with host communities priorities and coordinating aid efforts at all levels (local, national, and international) to increase ownership and efficient delivery of services. It is therefore basically offering leadership to achieve certain laid objectives. According to McDade (2004), good management ensures that sufficient local resources and capacity exist to sustain the project in the absence of outside resources. Community based projects are complex (Weinberg, 2008) and require multifaceted management skills. A project manager team has to manifest not only project management related skills (Kirsch, 2000), but also technical and expertise as required by the project (Thite, 2001). Project management activities include but are not limited to defining project scope and requirements gathering, managing resources and relevant training issues within a project, advising about technical architecture, identifying specific and general project management practices and escalation procedures, estimating project schedule and budget, ascertaining and managing risks within a project and preparing risk mitigation.

The matching or fit between a Project Manager and project extends not only to the technical skills as enumerated above, but also to other general project (Swanson and Beath, 2000). A project manager is likely the most senior person within a project and is often perceived as a sounding board for technical and architectural decisions made for the project. In addition, the project manager is also expected to demonstrate a deep knowledge of the business objectives of the project being undertaken (Bloom, 2006). Prior literature has shown that task familiarity helps in improving performance and increasing sustainability of a project (Goodman and Leyden, 2001). Prior exposure to the project characteristics such as technology, or methodology would make the current task more familiar to the Project Manager, and hence improve sustainability (Banker and Slaughter 2000). McDade (2004) indicated that individuals with good management skill are considered to be good leaders and therefore, through their leadership organizations are steered to prosperity. Precise nature of leadership and its relationship to key criterion variables such as subordinate satisfaction, commitment, and performance is still uncertain, leadership does remain pretty much of a 'black box' or unexplainable concept." However, not all leaders are good managers. Therefore, in the quest

to establish effect of management skills on sustainability of community projects, leadership should be distinguished from management.

Project management teams have to influence all that they interact with so that project sustainability can be achieved; therefore they need not only to possess good management skill but leadership skills as well. The Project management teams have to interact with many stakeholders, they have to not only manage internal project activities, their peers and superiors, but also interact with clients, using skills that are essentially non-technical in nature, and which may not be easily imitable. These include but are not limited to organizational knowledge, implied knowledge in handling people within the organizational structure, leadership and management skills, and customer handling skills (Kirsch, 2000). Within project teams, as individuals' progress from technical roles to more managerial roles, these skills come into play, and help in effective project management. Wagner and Sternberg (1985) focus on skills that are tacit, and gained through experience rather than being taught in a classroom. They classify these skills as related to managing self, others, and career. They find that differences in these skills between a novice and an expert are consequential for career performance in professional and managerial career pursuits. Kirsch (2000) has highlighted that successful project management requires both hard and soft skills. Hard skills comprise technological skills, domain expertise, experience as well as project management experience, and project management skills such as planning, monitoring, risk management and scheduling.

2.6 Project monitoring and sustainability of water and sanitation projects.

Millions of dollars are wasted every year on tens of thousands of water systems around the world that break, become abandoned and prove to be unsustainable. And every day, women and children in developing countries are cruelly reminded of the short-lived hope of clean water when they pass by broken hand pumps or capped wells in their villages, forcing them to again rely on unsafe water sources (World Bank, 2002). Effective, participatory and regular monitoring of community development programs can improve management, accountability, participation, trust, learning, and efficiency and development impacts (Görgens, Nkwazi, and Govindaraj, 2005). Monitoring and evaluation is a vital tool of management in any development project. It starts right from the planning stage of the project cycle (Khan, 2003). It is important for any project aimed at addressing development issues to have an effective monitoring and evaluation system to ensure efficient delivery of services

with intended outcome and sustainability of the program/project benefits, and policy implementation leading to the envisioned change (Khan, 2003).

In management of projects, monitoring can be used to improve the way governments and private organizations achieve results and ensure project sustainability. This can be ensured through investing in strengthening a national monitoring and evaluation system is important as it will eventually save resources that may otherwise be spent in inefficient programs or overlapping activities supported by different partners (Global Fund, 2004). A mature and sustained monitoring and evaluation system has the potential to lead the organization towards meeting its responsibilities and achieving its goals, even when faced with socio-political crises that mar the development sector so often (IFAD, 2002). Monitoring and evaluation systems are designed "to inform project management of whether implementation is going as planned or corrective action is needed. A well-designed Monitoring and Evaluation system provides data on the progress of a project and whether it is meeting objectives (World Bank, 2002).

The research which was conducted in Niger, Benin and Cameroon by World Bank helped in development of basic approach towards an effective implementation of community based monitoring and evaluation system (World Bank, 2000). It includes a system for its use and the operational tools to use in facilitating to its sustainability (World Bank, 2000). The findings were intended for trainers and development workers with aim of introducing of monitoring and evaluation system in their projects and programs for their sustainability (World Bank, 2000). The World Bank suggested that project monitoring would be of little or no use if it is not consistently supported by all the stakeholders towards addressing the sustainability issues of the projects (World Bank, 2000). The donors, project managers, and staff must all actively participate in the implementation of a monitoring and evaluation system for its effectiveness and sustainability (Dyason, 2010).

2.7 Theoretical framework

This section presented relevant theories that this study was based on. This study was built upon certain theories that have much links with sustainability in organizations. The most outstanding ones that have found much application in sustainability include Resource Dependence Theory (RTD) and Complexity Theory (CT). Despite the fact that community based projects are classified as non-profit making organizations, they still remain economic institutions in that they use society's scarce resources (land, labour and capital) to produce

goods and services of value. These organizations have operating costs, impose costs on society to the extent that they use contributions and voluntary services to provide superior value to society and need a reliable flow of revenue to finance their mission and be financially sustainable.

2.7.1 The Resource Dependency Theory

The proponents of this theory were Pfeffer and Salancik in 1978. They found out that the external resource of organizations affects the behaviour of the organization. The theory is based upon the following tenets: Organizations are dependent on resources, these resources ultimately originate from the environment of organizations, the environment to a considerable extent contains other organizations, the resources one organization needs are thus often in the hand of other organizations, resources are a basis of power, legally independent organizations can therefore be dependent on each other.

One of the tenets of this theory is that, organizations depend on resources to function. These resources can be human or financial. Such resources are necessary and crucial for an organization to achieve sustainability. In relation to this, community based organizations implementing water and sanitation projects require resources to sustain projects they have implemented. These resources are form of human, finances and expertise.

2.7.2 Complexity theory

Complexity theory, which is the study of nonlinear dynamic systems promises to be a useful conceptual framework that reconciles the essential unpredictability of industries with the emergence of distinctive patterns. Despite the fact that the theory was originally developed in the context of physical and biological sciences, today it has found applications in social, ecological and economic systems which also tend to be characterized by nonlinear relationships and complex interactions that evolve dynamically over time (Kiel and Elliott, 1996).

During the 1990s, there was an explosion of interest in complexity as it relates to organizations and strategy. The theory suggests that simple deterministic functions can give rise to highly complex and often unpredictable behavior. Thus, applying this theory in strategic planning presupposes flexibility on the part of an organization. Any strategic planning should be done in such a manner that it accommodates the “unexpected”. Thus

organizations would not only depend on others but devices alternative strategies to counter the unexpected. The two theories (resource dependency and complexity theories) thus fit well in the current study, but not one without the other. Community based projects need a merger of these theories in strategic financial planning to acquire sustainability.

2.8 Conceptual Framework

This section provided a structural narrative description of the relationship between the variables forming the concepts of the study on sustainability. In this study, the framework presented below is an illustration of possible underlying factors that may be influencing sustainability of water and sanitation projects beyond donor support.

Capacity of the institution may influence sustainability of water and sanitation projects in that if institution governing these projects lacks essential institutional capacity they may be hindered from achieving their development goals and sustainability of these projects.

Beneficiary participation which may be in kind or financial may determine if water and sanitation projects are sustainable. Participation from the beneficiaries may result to project ownership hence support of the project by the beneficiaries when the donor exits.

Project success and sustainability may depend on how the project is managed. If project are mismanaged, they may collapse when the donor exit while well managed project may be sustainable and provide long term benefits to the beneficiaries.

Project monitoring relate with sustainability of water and sanitation in that, when donor fund these projects, they are not there frequently to ascertain if the projects are implemented accordingly as agreed. Therefore, monitoring of these projects might have a bearing on their sustainability.

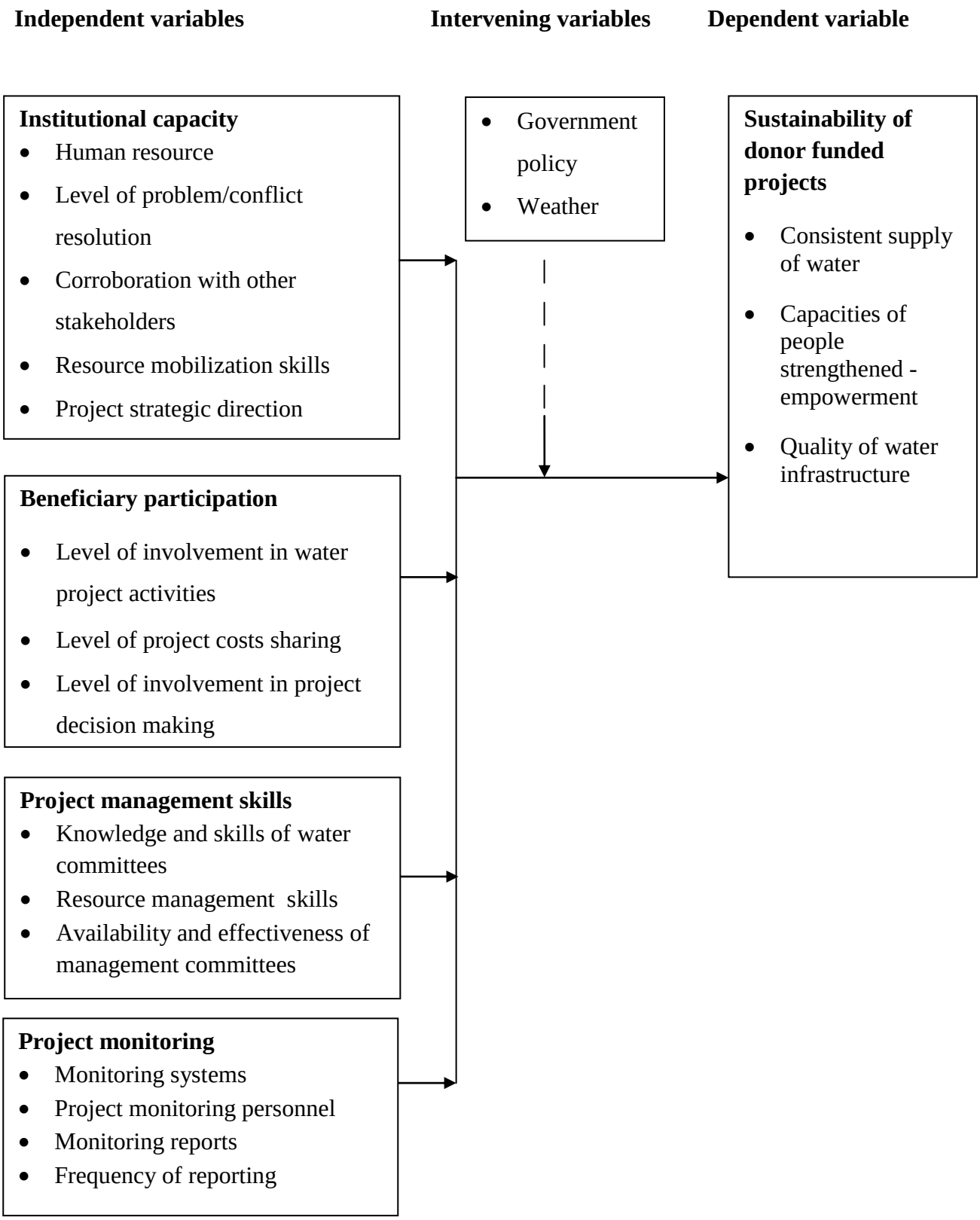

Figure 1: Conceptual Framework

From the conceptual table above, capacity of the institution may influence sustainability of water and sanitation projects in that when institution governing these projects lacks essential capacity, may be hindered from achieving their development goals, this may hinder sustainability of these projects. Beneficiary participation in kind or financially may determine if water and sanitation projects are sustainable. Participation may result to project ownership hence support of the project by the beneficiaries when the donor exits.

Project success and sustainability may depend on how the project is managed. If projects are mismanaged, they may collapse when the donor exit while well managed project may be sustainable. Project monitoring relate with sustainability of water and sanitation in that, when donor fund these projects, they are not there frequently to ascertain if the projects are implemented as agreed. This might have a bearing on sustainability of the projects.

2.9 Summary

This chapter discussed in details the concept of sustainability of donor funded sanitation and water projects. It brought to light that sustainability is a practice which when applied may lead in maintaining society resources without damage. Through sustainable development, communities in the world seek to achieve sustainability in their life and also improve it. Sustainability encompasses conventional approaches while adding a longer-term perspective. To achieve sustainability, efforts have been applied, while others have paid off, other efforts have not for lack of proper project management, resources and commitment of all stakeholders. This points out a clear lapse in effort to attain sustainability in community based project. This study therefore sought to establish the effect of institutional capacity, beneficiaries' participation, project management skills and project monitoring on sustainability of donor funded water and sanitation projects in Laikipia East District, Laikipia County.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlined the research design and methodology that was used for the purpose of gathering information in order to complete the study. It gave details on the research design, target population, the sample and sampling procedure, data collection instruments, validity and reliability and data analysis and presentation.

3.2 Research Design

This study used descriptive survey. According to Mugenda and Mugenda, (2003) survey research could be descriptive, exploratory or involving advanced statistical analysis. Descriptive survey determines and reports the way things are and attempts to describe such things as possible behavior, attitudes, values and characteristics. Schindler and Coopers, (2003) says that descriptive studies are structured with clearly stated investigative questions. Descriptive studies serve a variety of research objectives including description of phenomena or characteristics associated with subject population, estimate of proportion of population that have similar characteristics associated and discovery of association among different variables (Churchill, 1991). Orodho, (2004) notes that the choice of the descriptive survey research design is made based on the fact that in the study, the research is interested on the state of affairs already existing in the field and no variable would be manipulated. Further, according to Bryman and Bell, (2003), descriptive study is concerned with determining the relationship between variables. Descriptive research design was chosen in this study because the study sought to establish the factors influencing sustainability of water and sanitation donor funded projects in Laikipia East District, Laikipia County.

3.3 Target Population

According to Ogula, (2005), a population refers to any group of institutions, people or objects that have common characteristics. The target population of the study was the household water consumers of the community water projects and District Water Officers.

Laikipia East District has got twelve (12) water and sanitation donor funded projects Laikipia East District district has got an estimated total population of 42,090 households spread across the seven locations namely; Marura, Nturukuma, Naibor, Ethi, Nanyuki, Segera and Umande. The estimated number of households served by the donor funded water projects is 4,256. The

target population of the research study consisted of 4,256 household water consumers' of the water projects and two District Water Officers from the Ministry of Water and Irrigation.

3.4. Sampling and sampling procedure

A sample size is a smaller group or sub-group obtained from the accessible population (Mugenda and Mugenda, 1999). The sample is selected using some systematic format. Due to the nature of the study, the researcher adopted Cochran (1963) formula to calculate the sample size of household water consumers' respondents and purposive sampling technique in order to select the two key informants from the Ministry of Water and Irrigation.

The sample size of household consumers at 7% level of significance was obtained as presented below:

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

Whereby n is the sample size

N is the target population (no of household consumers) =4,256

e is the level of significance = 0.07

$$n = \frac{4,256}{[1+4,256x0.07^2]} = 194 \text{ households}$$

Through purposive sampling two key informants were selected. A sample size of 194 household water consumers was obtained using Cochran formulae. Stratified proportional sampling technique, was used to obtain a sample of household consumers' from each of the seven locations who were then selected through simple random sampling technique as presented in Tables 3.1 and 3.2.

Table 3.1 Proportionate sampling of household consumers in Laikipia East District

Location	No of house hold consumers	Sample size
Segera	430	20
Umannde	634	29
Marura	560	26
Nturukuma	600	27
Naibor	480	22
Ethi	452	20
Nanyuki	1100	50
Total	**4256**	**194**

The composition of the sampled respondents is presented in Table 3.2

Table 3.2 Sampling frame of stakeholders

Target group	Population size	Sample size
Key informants	2	2
Household consumers	4256	194
Total	**4294**	**196**

The study applied both probability and non probability sampling procedures to obtain data from the respondents. Probability sampling involved simple random sampling and systematic sampling while non probability sampling involved purposive sampling. Simple random sampling was used to pick the first household where the questionnaire was to be administered. Once the first household was randomly identified, Systematic sampling procedure was used to collect data through questionnaires in the subsequent households within the location. The choice of simple random sampling was informed by the fact that, simple random sampling can be used as no complexities are involved. It is also useful when relatively small and clearly defined population is used (Kombo and Tromp, 2006). Purposive sampling procedure involved selection of a sample on the basis of the researcher's own judgment depending on the elements and the nature of the research objective. This was applied in identifying the key informants who participated in the study as purposive sampling

is appropriate when the informants have a specific type of knowledge or skill required in the study. Purposive sampling may be used together with the both qualitative and quantitative methods of data collection (Kombo and Tromp, 2006).

3.5 Research instruments

In order to generate quantitative and qualitative data a number of methods were used to collect both primary and secondary data. This study collected quantitative data using a questionnaire from the households that benefits from the donor funded water and sanitation project.

The questionnaires had structured open and closed ended questions. The open ended questions were used to collect qualitative data while the close ended ones were used to get quantitative data. The questionnaire was divided into six sections. The first section of the questionnaires sought to get the demographic information about the respondents, the second section got information on institutional capacity, the third section got information on beneficiaries' participation, the fourth section got information on management skills and the fifth section got information on project monitoring. The questionnaires were administered by the researcher with the help of research assistants. Interview schedule was used to collect data from key informants. Collection of secondary data involved a review of Ministry of water Publications, journals, water project reports and development plans.

3.6. Validity of the instrument

According to Mugenda and Mugenda, (2003) validity is the accuracy and meaningfulness of inferences, which are based on the research results. It is the degree to which results obtained from the analysis of the data actually represent the phenomenon under study. Content validity was used to ensure that the measures included an adequate and representative set of items to tap the dimension and elements of concepts under study. In this regard, validity of the research instrument was instrumental to ensure that the study collected relevant information to answer the research questions. Mugenda and Mugenda (2003) contend that the usual procedure in assessing the content validity of a measure is to use a professional or expert in a particular field. To establish the validity of the research instruments the researcher sought the opinions of experts in the field of study especially the researcher's supervisors. This facilitated the necessary revision and modification of the research instruments thereby enhancing validity.

3.7 Reliability of the instrument

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. Reliability is important because it enables the researcher to identify the ambiguities and inadequate items in the research instrument. Reliability of the research instruments was enhanced through a pilot study that was done in a different sub county from study area. The respondents were conveniently selected since statistical conditions were not necessary in the pilot study (Cooper and Schindler, 2003). The pilot data was not included in the actual study. The pilot study allowed for pre-testing of the research instruments.

Reliability was measured through test-retest technique by administering the questionnaires to a group of individuals with similar characteristics as the actual sample size. The test was repeated after two weeks. Scores obtained from both tests were correlated to get the coefficient of reliability. A Spearman's correlation coefficient of 0.7 was accepted.

3.7.1 Pilot study

Pilot testing is a smaller version of a larger study which is conducted in order to prepare for the study or to field test the survey in order to provide a rationale for the design (Orodho, 2004). It involves pre-testing of the instruments to determine their validity and reliability. Pilot-testing of the instruments was carried out using a different but a similar group in Laikipia North sub county. The aim of the pilot survey was to test whether the design of questions is logical, if questions were clear and easily understood and whether the stated responses was exhaustive and how long it took to complete the questionnaire. The pre-test also allowed the researcher to check on whether the variables collected could be processed and analyzed easily. The pre-testing was carried out on a sample consisting of 10% of the respondents. Questions found to be interpreted differently during the pre-testing were rephrased so that they had same meaning to all respondents. Views given by the respondents during pre-testing were analyzed and used to improve the questionnaires before actual collection of data.

3.8 Data Collection Procedure

The data was collected using pre-coded questionnaires and interview guide administered by the researcher and research assistants. The researcher collected both primary and secondary data for the purpose of making conclusion and recommendations. Primary data was collected using structured questionnaires and structured interview guide. Information

from the key informants was obtained through the interview guide. The secondary data was collected from the Ministry of water Publications, journals, water project reports and development plans. The questionnaires were administered by the researcher and research assistants to the respondents by dropping them to the respondents and then collecting them when filled. Adequate time was accorded to the respondent in order to obtain appropriate answers to the questions.

3.9 Data Analysis Techniques

This began with pre-processing of collected data through editing in order to detect errors and omissions and making of corrections where necessary. This involved a careful analysis of the completed questionnaires in order to ensure that collected data was accurate and consistent with other information gathered. The data was classified on the basis of common characteristics and attributes. The data was organized and tabulated inform of statistical tables in order to allow further analysis of the data. This facilitated the summation of items and detection of errors and omissions. The organized and well coded data was then analyzed through descriptive statistics which is a technique which enables researchers to meaningfully describe data with numerical indices or in graphical form. This entailed analysis of correlation of factors and use of measures of central tendency such as the mean, frequencies and percentages. The Statistical Package for Social Sciences was used in order to do statistical analysis of the data. Content analysis technique was applied to analyse qualitative data by identifying patterns and themes. After analysis, data was then presented using percentages and tables.

3.10 Operationalization of variables

Objectives	Variables	Indicators	Measurement	Measurement scale	Tools of Analysis
To assess how institutional capacity influence sustainability of water and sanitation donor funded projects	**Independent** Institutional capacity	Level of Human resource Level of problem/conflict resolution Corroboration with other stakeholders Resource mobilization skills Project strategic direction	Number of employees Level of stakeholders involvement Availability of project funds Presence of a strategic plan	Ordinal	Percentages
To establish how beneficiary participation influence sustainability of water and sanitation donor funded projects	**Independent** Beneficiary participation	Level of involvement in water project activities Level of project costs sharing Level of involvement in project decision making	Type of contribution Amount of money paid	Nominal Ordinal	Percentages

To determine how project management skills influence sustainability of water and sanitation donor funded projects	**Independent** Project management skills	Knowledge and skills of water committees Resource management skills Availability and effectiveness of management committees	Type of training Quality of work output	Nominal Ordinal	Percentages
To examine how project monitoring influence sustainability of water and sanitation donor funded projects	**Independent** Project monitoring **Dependent** Sustainability of water and sanitation donor funded projects	Monitoring systems Project monitoring personnel Monitoring reports Frequency of reporting	Presence of a monitoring system Number of project monitoring personnel Number of monitoring reports	Ordinal Nominal	Percentages

3.11 Ethical Consideration

Before the actual administration of the instruments, an explanation on the aim and the purpose of the study was done to the respondents in the language they understood better. The researcher endeavoured to obtain an informed consent from the respondents before undertaking to collect data from the field. Informed consent was obtained by participant's permission to participate in the study before administering the questionnaire to him or her. In order to obtain unbiased data the researcher exercised utmost caution while administering the data collection instruments to the respondents to ensure their rights and privacy were respected. High level of confidentiality on the information provided by respondents through interview or questionnaires was maintained. The researcher also ensured that respondents were interviewed at a time and place most convenient to them.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the data that was found on factors influencing sustainability of water and sanitation donor funded projects in Laikipia East District, Laikipia County, Kenya.

4.2 Questionnaire Return Rate

As shown in Table 4.1, the study targeted 194 household respondents out of which 179 household respondents and returned their questionnaires contributing to the response rates of 92%. This response rates were sufficient and representative and conforms to Mugenda and Mugenda (1999) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. This commendable response rate was due to extra efforts that were made by the researcher and the research assistants via personal calls and visits to remind the respondent to fill-in and return the questionnaires.

Table 4.1 Questionnaire Return Rate

	Targeted	Returned	Percent
House hold respondents	194	179	92

4.3Demographic information

The study sought to establish information on various aspects of respondents' background such as time of being a resident, gender, academic/professional qualification, occupation, and average income. This information aimed at testing the appropriateness of the respondent in answering the questions regarding factors influencing sustainability of water and sanitation donor funded projects in Laikipia East District, Laikipia County, Kenya.

The study sought to find out the whether the household respondents were resident of the area.

Table 4.2 Being a resident

	Frequency	Percent
Yes	179	100
No	0	0
Total	**179**	**100**

From the Table 4.2, majority (100%) of the household respondents were residents of Laikipia East District and therefore they would give valid and reliable information about water project in Laikipia County.

The study required the respondents to indicate their gender.

Table 4.3 Gender of the respondents

	Frequency	Percent
Male	132	73.7
Female	47	26.3
Total	**179**	**100**

According to Table 4.3, this research interviewed 179 households in the study area. 73.7% of these respondents were males while 26.3% were females. The findings indicate that majority of the households were headed by males who were involved in the water projects in the locality.

The respondents were requested to indicate if they were members of the project management committee.

Table 4.4 Members of water project management committees

	Frequency	Percent
Members	21	11.7
Non members	158	88.3
Total	**179**	**100**

According to findings in Table 4.4, 11.7% of the respondents were members of water project management committees while 88.3% were non members. Of those who reported to be members, 7.3% had been members of their respective water project management committees for a period of 3-4 years while 2.8% had been members of their respective water management committee for a period of above 5 years.

The respondents were requested to indicate their age.

Table 4.5 Respondents age distribution

Age cohort	Frequency	Percent
18-24	1	0.6
25-35	13	7.3
36-49	109	61
50-64	55	30.5
65	1	0.6
Total	**179**	**100**

From Table 4.5, majority of the respondents (61%) were mature adults falling within the reproductive age bracket or above. In terms of age distribution by age cohort, 0.6% of the respondents were aged 18-24 years, 7.3% 25-35 years, 61% 36-49 years, 30.5% 50-64 years while 0.6% was aged 65 years. This indicates that, most of the respondents (109) were mature adults therefore the responses they provided were conclusive.

The study required the respondents to indicate their highest education level.

Table 4.6 Education level of the respondents

Highest education level	Frequency	Percent
University	0	0
College	8	4.5
Secondary	67	37.4
Never completed secondary education	44	24.6
Primary	49	27.4
Never completed primary education	9	5
No formal education	2	1.1
Total	**179**	**100**

According to the findings in Table 4.6, none of the respondents had acquired university education, 4.5% had college education, 24.6% had completed secondary education, 37.4% had joined but never completed secondary education, 27.4% had completed primary education, 5% had joined but never completed primary education while 1.1% didn't have formal education. Therefore it can be noted that majority of the household respondents had attained the basic education and they therefore provide valid and consistent information about sustainability of water project in their locality.

The study required the respondents too indicate their occupation.

Table 4.7 Occupation of the respondents

Occupation	Frequency	Percent
Peasant farmers	141	78.8
Small scale business	17	9.5
Charcoal/firewood vendors	1	0.6
Traders	2	1
Formal employment	5	2.8
Casual labourers	13	7.3
Total	**179**	**100**

According to the findings in Table 4.7, 78.8% of the respondents were pure farmers, 9.5% were engaged in small scale businesses, 0.6% of the respondents were charcoal/firewood vendors, 0.6% were traders, 7.3% were casual labourers while 2.8% were engaged in formal employment. Therefore the majorities of the respondents were peasant farmers and were poor since their occupation could only help them raise income for daily household needs.

The study required the respondents to indicate their the household income level

Table 4.8 Occupation of the respondents

	Frequency	**Percent**
Between 2501-5000	70	38.8
Between 5001-7500	45	25.3
Between 7501-10000	50	28.1
More than 10000	14	7.8
Total	**179**	**100**

Accoding to the findings in Table 4.8, 38.8% of the households earned an average monthly income of between Kshs 2501-5000, 25.3% earned between Kshs 5001-7500, 28.1% earned between Kshs 7501-10000 while 7.8% earned more than Kshs 10,000. Therefore the majorities of the households were poor and could barely afford the basic household needs due to lack of finances.

4.4 Institutional capacity and the sustainability of water and sanitation donor funded projects.

The first objective of the study was to assess how institutional capacity influence sustainability of water and sanitation donor funded projects**.**

The study sought to find out the project's capacity to deal with project related issues.

Table 4.9 Capacity to deal with project related issues

	Frequency	Percent
Very good	2	1.1
Good	107	59.8
Average	68	38.0
Poor	2	1.1
Total	**179**	**100**

From Table 4.9, data shows that, 1.1% of the respondents rated their respective water project capacity to deal with project related issues as being very good, 59.8% as been good, 38.0% as being fair/average while 1.1% rated their respective project capacity as being poor. Various reasons were provided for the rating which included water supply, response to water project emergencies, water charging, problem solving, leadership and equity. This depicts that, to a greater extent the water projects are able to deal with water related issues thus enhancing their sustainability.

The study sought to find out from the respondents if the members have received any form of training.

Table 4.10 Capacity building of project members

	Frequency	Percent
Yes	57	32
No	120	66.9
Do not know	2	1.1
Total	**179**	**100**

According to the findings in Table 4.10, 32% of the respondents indicated that their respective water project were building the capacity of its membership, 66.9% said their water project didn't have that capacity while 1.1% of the respondents didn't know. Of those who were positive, 13.7% said that their respective water project had built the capacity of its members on project management skills while 16.1% indicated that their respective water projects had built the capacity of its membership on conflict resolution and management.

Therefore most of the project members have not received any form of training from the project.

The study sought to find out if the water projects have resources to sustain their operation.

Table 4.11 Financial capacity to sustain water projects

	Frequency	Percent
Yes	133	74.5
No	46	25.5
Total	**179**	**100**

From Table 4.11, 74.5% of the respondents said that their respective water project had stable sources of funds to support their project activities while 25.3% indicated that their respective project didn't. This indicate that most project have adequate financial capacity which enhance project sustainability.

The study requested the respondents to indicate the major source of funds for their projects.

Table 4.12 Major source of project's funds

Statements	Frequency	Percent
Membership contribution	17	9.6
Support from donors	101	56.7
Support from government	1	0.7
Water charges	60	33
Total	**179**	**100**

According to the findings in Table 4.12, 9.6 % of the respondents indicated membership contribution as the major source of the funds, 33% cited water charges, 56.7% cited support from donors while 0.7% cited supported from the government and government agencies. This illustrate that most of the projects depends on donor funds for the sustainability of their projects.

The study sought from the respondents if the project has an operational office.

Table 4.13 Operational office

	Frequency	Percent
Yes	86	47.8
No	93	52.2
Total	**179**	**100**

From Table 4.13, 47.8% of the respondents indicated that their respective water projects had an operational office while 52.2% were of the contrary view. This illustrates that some of the projects lack a central and a common place from where they can operate from. This negatively influences operations of the projects further jeopardizing the sustainability of the projects.

The respondents were required to indicate if their projects have employed staff.

Table 4.14 Project staff

	Frequency	Percent
Yes	179	100
No	0	0
Total	**179**	**100**

According to the findings in Table 4.14, all of the respondents (100%) indicated that their respective water project had employed project staff with the average number of project staff being 1.15 (Min-0, Max-2). This illustrates that all the projects have entrusted management of their project employees which ensures project are managed professionally thus enhancing project sustainability.

The respondents were asked if the project have a strategic plan

Table 4.15 Availability of a strategic plan

	Frequency	Percent
Yes	131	73
No	39	21.8
Do not know	9	5.2
Total	**179**	**100**

According to the findings in Table 4.15, 73% of the respondents indicated that their respective water project had a strategic plan while 21.8% said that theirs didn't and 5.2% indicated that they do not know. This indicates that most of the projects have adopted a strategic direction to guide their operations which ensures sustainability of the water projects.

The respondents were requested to indicate if various members were involved in the formulation of the strategic plan.

Table 4.16 Involvement of members in strategic planning

	Frequency	Percent
Involvement of all members	5	2.9
Committees members only	158	88.4
Committee members and other members	16	8.7
Total	**179**	**100**

From Table 4.16, the data shows that, of those who were affirmative, 2.9% indicated that the strategic plan was develop through the involvement of all members, 88.4% said that it was developed by the committee members only while 8.7% reported that the plan was developed through the engagement of the committee members and other project members. This implies that committee members of the water projects were to a very great extent involved in deciding the strategic direction of the projects. Lack of involvement of the members hinders ownership of the projects therefore adversely affecting on the sustainability of the water projects.

The respondents were required to indicate if their project has documented their vision and mission.

Table 4.17 Presence of a documented vision and mission statements

	Frequency	Percent
Yes	20	11.3
No	153	85.4
Do not know	6	3.3
Total	**179**	**100**

From Table 4.17, 11.2% of the respondents indicated that their respective water project had a documented vision and mission statement, 3.3% of the respondents indicated that they do not know while the rest (85.4%) said their projects do not have. Of those who were affirmative, only 1.7% indicated that such vision and mission statement were well known by the project members. This indicates that majority of the project have not documented their vision and mission statements therefore members cannot articulate the future of the projects neither understand fully what the project need to do. This negatively reduces the sustainability of the projects.

The study further requested the respondents to indicate the ability how the projects deal with conflict within its membership.

Table 4.18 How the projects deal with conflicts within its membership

Statement	Frequency	Percent
Through the management committee	160	89.6
Use of by- laws	19	10.4
Total	**179**	**100**

According to the findings in Table 4.18, 89.6% of the respondents said that such conflicts were solved through the management committee while 10.4% indicated that their respective water projects had well elaborated by-laws to deal with such issues when they arise. This implies that, there is adequate mechanisms of solving project related conflicts which ensure project sustainability.

The study sought from the respondents if other stakeholders are involved in the activities of the projects.

Table 4.19 Stakeholders involvement

	Frequency	Percent
Yes	88	49.2
No	72	40.7
Do not know	19	10.2
Total	**179**	**100**

According to the findings in Table 4.19, majority of the respondents (49.2%) indicated that stakeholders were involved in their respective water projects, 40.7% said that stakeholders were not involved while 10.2% didn't know. Of those who were positive, 42.7% said that the stakeholders were involved in soliciting funds, 4.7% in trainings on water management and conservation while 1.8% said that the stakeholders were involved in loaning the project to undertake its activities. This depicts that, involvement of stakeholders in the activities of the projects ensures that the projects are sustainable.

The respondents were requested to indicate the ability of the project in addressing member's water and sanitation related needs.

Table 4.20 Project ability in addressing member's water and sanitation related needs

	Frequency	Percent
Very good	4	2.2
Good	86	48.3
Average	88	48.9
Poor	1	0.6
Total	**179**	**100**

From Table 4.20, 2.2% of the respondents rated their respective water project capacity as being very good, 48.3% as being good, 48.9% as being average while 0.6% rated their project capacity as being poor. For those who rated their project as being very good or good, 43% of

the respondents were of the opinion that their respective project addressed such needs quickly, 26.8% said that there was reliable access to water throughout the year and 17.6% said that there was timely repair of broken pipes. Of those who rated their respective project as being average or poor, reason cited include strict water charges was as mentioned by 6.3% of the respondents, poor leadership (14.1%) and inadequate supply of water (1.4%).

The study inquired from the respondents the contribution of institutional capacity on the sustainability of the water projects.

Table 4.21 Institutional capacity and its contribution towards sustainability of the water project

	Frequency	**Percent**
Yes	176	98.6
No	1	1.4
Total	**179**	**100**

According to the findings in Table 4.21, majority (98.6%) of the respondents indicated that institutional capacity contributes towards sustainability of the water projects while 1.4% indicated that institutional capacity does not contributes towards the sustainability of the water projects. Therefore institutional capacity enhances water projects in the locality.

4.5 Beneficiary participation and the sustainability of water and sanitation donor funded projects.

The second objective was to establish how beneficiary participation influence sustainability of water and sanitation donor funded projects.

The study required the respondents to indicate the main source of water for the household.

Table 4.22 Main source of water for members of your household

	Frequency	**Percent**
Project water	148	82.7
Rivers	24	13.4
Ponds	7	3.9
Total	**179**	**100**

According to the findings in Table 4.22, data shows that, the main source of water for the respondents was found to be piped project water which was indicated by 82.7% of the respondents. 13.4% of the respondents indicated that their main source of was rivers while 3.9% indicated ponds. This indicates that the respondents mainly rely on the project water.

The study required the respondents to indicate who was involved in the installation of the project water.

Table 4.23 Who was involved in the installation of project water

	Frequency	Percent
Donors	149	83
Beneficiaries	24	13.2
Government agencies	7	3.8
Total	**179**	**100**

According the findings in Table 4.23, majority of the respondents (96%) indicated that the water projects had been installed through the support of donors while 3.2% reported that the installation had been done through member's contribution. Only 0.8% of the respondents indicated that the source had been installed through the support of government and government agencies. Therefore, donors contributed significantly to the installation of the water projects.

The study further sought to establish if the beneficiaries pay for the project water.

Table 4.24 Payment for project water

	Frequency	Percent
Yes	179	100
No	0	0
Total	**179**	**100**

As shown in Table 4.24, a probe on the project beneficiaries' contribution towards the sustainability of the donor supported project indicated that all the beneficiaries paid for water use. On average, these project beneficiaries paid a monthly average fee of Kshs 174.3 (Min-

100, Max-200). This therefore indicates that the beneficiaries contribute towards the sustainability of the water projects through payment of water charges.

The respondents were further required to indicate if they are involved towards the management and maintenance of their water projects.

Table 4.25 Beneficiary's contribution towards management and maintenance of the water project

	Frequency	Percent
Yes	177	98.9
No	2	1.1
Total	**179**	**100**

From Table 4.25, the data revealed that almost all the respondents (98.9%) participate or contribute towards the maintenance and management of the water projects with only 1.1% indicating that they didn't participate or contribute towards the maintenance and management of the projects.

27.6% of those who said that they either participated or contributed indicated that their participation was through being consulted during the installation phase of their respective water project, which was done through meetings; 63.8% indicated that they contributed in cash and in kind towards the installation; 4.6% said that they had been or still were project committee members/leaders; while 50.6% indicated that their contribution was through payment of water use charges.

This indicates that majority of the project members have been involved towards the maintenance and management of the water projects which positively contributes towards the sustainability of the water projects in the locality.

The study sought the opinion of the respondents on the main reason on how the beneficiary participation contributed towards success/sustainability of the water projects.

Table 4.26 How the beneficiary participation contributed towards sustainability of the water projects

Statements	Frequency	Percent
Ownership of project by members	103	57.5
Completion of project in time	9	5.0
Attracted more support from donors	8	4.6
Enhanced timely repair and maintenance	59	32.9
Total	**179**	**100**

According to the findings in Table 4.26, the majority (57.5%) reported that the main reason beneficiary's contribution or participation contributed towards project success and sustainability is thorough enhancing project ownership by project members, 5.0% of the respondents said that the contribution or participation had ensured completion of the project in time, 32.9% said this enhanced timely repair and maintenance while 4.6% said that this had attracted more support form development partners and members for up scaling of the project.

4.6 Project management skills and the sustainability of water and sanitation donor funded projects.

The third study objective south to determine how project management skills influence sustainability of water and sanitation donor funded projects.

The study inquired from the beneficiaries if their projects have water management committees.

Table 4.27 Presence of water management committee

	Frequency	Percent
Yes	179	100
No	0	0
Do not know	0	0
Total	**179**	**100**

According to the findings in Table 4.27, all the respondents (100%) reported that their respective water projects had project management committees. This indicates that there is a body mandated to oversee the operations of the water projects.

The study further sought the opinion of the respondents on how active are their respective water management committees in ensuring project sustainability.

Table 4.28 How active is the water management committees

	Frequency	Percent
Very active	1	0.6
Active	153	85.3
Inactive	25	14.1
Total	**179**	**100**

As shown in Table 4.28, 14.1% of the respondents rated their respective project committee as not being active, 85.3% said that their project committee were active while 0.6% indicated that their respective water committees were very active. This implies that, commitment of the water management committees influenced the sustainability of the water projects.

The study inquired from the respondents to indicate who is in charge of the day to day management of the water projects.

Table 4.29 Who charge of the day to day management of the water projects.

Statement	Frequency	Percent
Water committee members	31	17.2
Employed staff	148	82.8
Total	**179**	**100**

According to the findings in Table 4.29, majority of the respondents (82.8%) said that employed staff was in charge of the day to day management of the water projects while 17.2% of the respondents reported that water committees were in charge. This implies that the day to day operations of the water projects is managed by employed project staff.

The study sought from the respondents whether those in charge of the day to day management of the water projects are trained in water management of the water projects.

Table 4.30 Training on water management to those involved in the day to day management of the water projects

	Frequency	Percent
Yes	142	79.1
No	11	6.2
Do not know	26	14.7
Total	**179**	**100**

From Table 4.30, 79.1% of the respondents were affirmative, 6.2% said that they had not been trained while 14.7% said that they were not aware as to whether they had been trained or not. This implies that, most of the people who are in charge of day to day management of the water projects have been trained on water management which ensures sustainability of the projects.

The respondents were required to indicate if the person in charge of management of the water projects has adequate water management skills.

Table 4.31 Presence of adequate water management skills

	Frequency	Percent
Yes	153	85.4
No	4	2.2
Do not know	22	12.4
Total	**179**	**100**

According to the findings in Table 4.31, majority of the respondents (85.4%) indicated that the persons in charge of the day to day management of the water projects had adequate skills

needed for project success and sustainability, 12.4% of the respondents were not in a position to judge as to whether they had the skills or not, while 2.2% were of the opinion that they didn't. Therefore this indicates that most of the staff employed by the water projects were skilled to perform their duties.

The project sought from the respondents the main challenges to water project management in their project.

Table 4.32 Main challenges to water project management

Statement	Frequency	Percent
Conflict among water users	59	33.2
Inequitable water distribution	60	33.3
Poor installation	3	1.6
Poor leadership	3	1.6
Intentional breakage of water pipes	54	28.9
Total	**179**	**100**

According to the findings in Table 4.32, On the various challenges related to water project sustainability, conflicts among water users as was indicated as the major reason accounting for 33.2% of the responses, this was followed by inequitable water rationing and distribution of water accounting for 33.3% of the responses received then intentional breakage and blockage of water pipes accounting for 28.9% of the responses. Poor project leadership and improper installations accounted for 1.6% of the responses each.

4.7 Project monitoring and the sustainability of water and sanitation donor funded projects

The fourth objective of the study was to examine how project monitoring influence sustainability of water and sanitation donor funded projects.

The study sought from the respondents if the project has a monitoring system.

Table 4.33 Project monitoring system

	Frequency	Percent
Yes	107	60
No	55	30.8
Do not know	17	9.2
Total	**179**	**100**

From Table 4.33, majority of the respondents (60 %) indicated that their project has a monitoring system, 30.8% indicated no while 9.2 of the respondents did not know if their projects had a monitoring system. This was also confirmed by the government water officers who indicated that majority of the water projects had adopted a certain form of monitoring system for their projects. The findings indicate that presence of a project monitoring system may be contributing in ascertaining how the water projects perform and therefore providing periodic and necessary information which contribute to the sustainability of the projects.

The respondents were required to indicate if their projects have regular project monitoring meetings.

Table 4.34 Project monitoring meetings

	Frequency	Percent
Yes	178	99.4
No	1	0.6
Do not know	0	0
Total	**179**	**100**

From Table 4.34, almost all of the respondents (99.4%) were affirmative that their respective projects undertook regular project monitoring while 0.6% were of the contrary opinion. Of those who were positive, 14.9% said that the follow up was undertaken on monthly basis, 58% on quarterly basis while 27% said that the follow up was usually done once annually. These findings indicate that, most of the projects have regular monitoring meetings to ensure project sustainability.

The respondents were asked to indicate how monitoring is done in their projects.

Table 4.35 How monitoring is done

	Frequency	Percent
Committee field visits	24	13.5
Members' meetings	136	75.8
Involvement of other stakeholders	3	1.7
Staff field visits	16	9
Total	**179**	**100**

According the findings in Table 4.35, majority of the respondents (85.4%) indicated that project monitoring was done through holding of members meetings, 13.5% of the respondents reported that project monitoring in their respective project was conducted through committee field visits, 1.7% through involvement of other stakeholders while 9% of the respondents indicated that project monitoring was done through staff field visits and reporting to the committee. This findings indicate that, majority of the projects involve the members during monitoring to ensure sustainability and success of the projects.

The respondents were required to indicate major benefits of regular project monitoring towards enhancement of the sustainability of the project.

Table 4.36 Benefits of regular project monitoring

Statement	Frequency	Percent
Better project management	45	25.2
Future planning	95	52.9
Evaluating project progress	36	20
Enhance resource mobilisation	3	1.9
Total	**179**	**100**

From Table 4.36, the data shows that, majority of the respondents (52.9%) indicated that regular project monitoring can enhance project sustainability through helping the projects in future planning, 25.2% indicated that it can help better project management, 20% reported that it can help in evaluating project progress and make necessary corrective measures while

1.9% said that regular project monitoring can facilitate resources mobilization that is essential for project success and sustainability.

The study inquired from the respondents the contribution of project monitoring towards the sustainability of the water projects.

According to the findings, 27.8% of the respondents were of the opinion that project monitoring had enabled timely maintenance and repair of the projects, 63.9% were of the opinion that it had enabled solve water related conflicts, 34.9% were of the opinion that it had enhanced equitable distribution of water resources while 27.2% of the respondents were of the opinion that the project monitoring had enhanced better utilization of available water resources. This depicts that project monitoring contributed in various ways which to greater extent contribute towards sustainability of the projects.

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study, discusses the findings of the study and presents conclusions, recommendations and suggestions for further research.

5.2 Summary of findings of the study

The purpose of this study was to establish the factors influencing sustainability of water and sanitation donor funded projects in Laikipia East District, Laikipia County, Kenya. The study was guided by four research objectives. Research objective one was to assess how institutional capacity influence sustainability of water and sanitation donor funded projects; research objective two sought to establish how beneficiary participation influence sustainability of water and sanitation donor funded projects; research objective three sought to determine how project management skills influence sustainability of water and sanitation donor funded projects; while research objective fourth sought to examine how project monitoring influence sustainability of water and sanitation donor funded projects. The study adopted a descriptive survey design. The sample comprised of 194 households and 2 officers from the Ministry Water and Irrigation.

5.2.1 Objective one: To assess institutional capacity and the sustainability of water and sanitation donor funded projects.

The study found out that majority of the water projects had the capacity to deal with project related issues. The study further found out that most projects were not training their members as was indicated by the majority. The findings also found out that most of the projects had the capacity to sustain their projects financially. The study established that the major source of funds for the project operations was from the donors. In regard of the projects having a central and secure place to operate from, the study further found out that most of the projects lacked an operational office. The study further found out that all of the projects had employed project staff to manage the affairs of the projects. In regard to the projects having a strategic direction, majority of the projects had a strategic plan. Most of the strategic plans were developed by water committee members only thus they lack input from the general members and stakeholders.

Majority of the projects members had no capacity to articulate the vision and mission of their respective projects. The study also found out that most projects solve project related conflicts through the water management committee. The study further found out that majority of the projects involved other stakeholders on their activities which further strengthened their capacity. The study established that, majority of the projects had the ability to address the member's water related needs. Further, the study found out that, majority of the respondents agreed that, institutional capacity contributes significantly towards the sustainability of the water projects.

5.2.2 Objective two: To establish how beneficiary participation influence sustainability of water and sanitation donor funded projects.

The study found out that, the main source of water for the respondents was their respective water projects. The study further established that majority of the projects were installed through the support of the donors. Further, the study found out that, all of the members paid for the water they used based on prescribed water user charges. The study further established that majority of the projects' members participated or contributed towards the maintenance and management of the water projects. The contributions were made through; consultation during initiation phase, cash and kind contributions, members being in leadership position and through payment of water user charges. The study further found out majority of the respondents agreed that beneficiary's participation contributed to the sustainability of the project through enhancing project ownership, completion of projects in time and through ensuring timely repair and maintenance of the water projects.

5.2.3 Objective three: To determine how project management skills influence sustainability of water and sanitation donor funded projects.

The study found out that, all projects had put in place water management committee. Majority of the project members indicated that their water management committees were active. The study found out that, majority of the projects was managed by employed staff. The study further found out that, majority of those managing the water projects on day to day basis were trained on water management. Further the study found that, majority of those managing water projects had adequate water management skills.

In addition, the study established that, conflict among the water users was the main challenge in management of the water projects when compared to inequitable water distribution, poor installation, poor leadership and intentional breakages of water pipes.

5.2.4 Objective four: to examine how project monitoring influence sustainability of water and sanitation donor funded projects.

The study found out that, majority of the projects had a project monitoring system. It also found out that, majority of the projects held regular project monitoring meetings. The study found out that majority of the monitoring meetings was held on a quarterly basis. The study established that most of the monitoring meetings were held through holding of members meeting.

The study further established that, majority agreed that regular project monitoring ensures project sustainability though helping the project in future planning. The study further established that, majority of the respondents agreed that, regular project monitoring enable the project to solve water related conflicts. They further added that regular project monitoring enhances project timely maintenance and repair, equitable distribution of water and better utilisation of project water.

5.4 Discussions of the study

A discussion of the findings is given according to the four objectives of the study.

5.4.1 Objective one: To assess institutional capacity and the sustainability of water and sanitation donor funded projects.

Based on the findings on the influence of institutional capacity on the sustainability of water and sanitation donor funded projects, it could be said that majority of the projects are in a position to solve water related issues such as water related conflicts, equitable distribution of water, repair and maintenance of the water projects. This means that these water projects are able to operate effectively and sustainably as the management of most of this water related issues have a direct linkage to water project sustainability. This collaborates previous findings by Tandon, (1988) who pointed out that organizations which have the capability to capitalize upon the collaborative capacity of its people are able to operate effectively than those that don't.

The fact that all the projects reached had employed project staff to manage their affairs shows that there was recognition by the project management committees and members that projects

are complex undertakings with intertwined and related activities, budgetary implication and timelines and as such requires competent individuals to manage them for the realization of set project objectives. This is in agreement with World Bank, (1996) which states that, institutions which lack human and institutional capacity, may be challenged to perform and achieve its development agenda therefore a need of such institutions to integrate capacity building in their development agenda.

Muchunguzi and Milne (1997) who studied 170 community based organisations in Kenya, Tanzania, Uganda, and Zimbabwe, identified financial capacity as one of the critical components of institutional capacity.As regards to financial capacity to support and sustain project activities, the study findings established that most of the project had the capacity to sustain financially their activities. Since the sustainability of water projects of water project is mainly challenged by their ability to purchase supplies for repair and maintenance, pay staff and purchase office consumables, this means that most of the project studied were better positioned to deal with the challenges to sustainability that most similar projects face

5.4 2 Objective two: To establish how beneficiary participation influence sustainability of water and sanitation donor funded projects.

On beneficiary participation and the influence on sustainability of water and sanitation donor funded projects, the fact that majority of the project members participated or contributed in one way or the other towards management and maintenance of their respective water project, supports previous findings by Batchelor, Mc Kerney and Scott, (2000) who said that it is widely accepted that beneficiary participation from an early stage in the project process increases project ownership and sustainability. A World Bank, (1998) impact evaluation of community water supply and sanitation projects in Sri Lanka, had further established that active participation by project beneficiaries at all project phases increases project sustainability. This view was further strengthened by the findings of this study where majority of the respondents agreed that beneficiary's participation contributed to the sustainability of the project through enhancing project ownership, completion of projects in time and through ensuring timely repair and maintenance of the water projects.

Mukandala, (2005) points out that allowing mobilization of local resources for local community projects is a means of enhancing empowerment, enhancing responsiveness to people's real needs, instilling a sense of ownership of projects by the local people and

promoting project sustainability. This view is collaborated by the study findings which showed that project members paid user water charges which in a great way availed the necessary resources for repair and maintenance of the water systems and other office overheads. This ensured that supply of water was not interfered with and as such members easily indentified and associated with the project as they feel that their real needs are being responded to. This presents a possibility for the project to operate sustainably.

5.4.3 Objective three: To determine how project management skills influence sustainability of water and sanitation donor funded projects.

On project management skills and the influence on the sustainability of water and sanitation of donor funded projects, Weinberg (2008) says that community based projects are complex and require multifaceted management skills. As such, personnel who are charged with day today management of water projects have to manifest not only project management related skills but also technical and expertise as required by the project (Thite, 2001). Kirsch (2000) identifies such expertise as to include the ability to define project scope and requirements gathering, managing resources and relevant training issues within a project, advising about technical architecture, identifying specific and general project management practices and escalation procedures, estimating project schedule and budget, ascertaining and managing risks within a project and preparing risk mitigation. Towards this, this study found out that all the projects had in place water management committees who with the employed staff managed the water project. The project management team responded adequately to concerns whenever raised. The study also found out that, the people appointed to manage the water project were effective. The study also found out that there is sufficient technical expertise to manage the project; there is sufficient human resource for sustainability of the project; the community is satisfied with the overall management of the water project by the people in charge.

The study further found out that those managing the water projects on day to day basis are trained on water management and had adequate water management skills. This is in line with Goodman and Leyden, (2001) who alluded that that task familiarity helps in improving performance and increasing sustainability of a project. This is also supported by McDade, (2004) who assert that individuals with good management skill are considered to be good leaders and therefore, through their leadership organizations are steered to prosperity.

5.4.4 Objective four: to examine how project monitoring influence sustainability of water and sanitation donor funded projects.

On project monitoring and the influence on the sustainability of water and sanitation donor funded projects, this study concurred with World Bank, (2002) which states that a well-designed monitoring system provides data on the progress of a project and whether it is meeting objectives and also by Khan, (2003) who asserts that, it is important for any project aimed at addressing development issues to have an effective monitoring and evaluation system to ensure efficient delivery of services with intended outcome and sustainability of the program/project benefits, and policy implementation leading to the envisioned change. The study found out that, majority of the projects had a project monitoring system. This indicates that most of the projects appreciate the need of having a system to enable them check on a stipulated period of time what is happening in the project thus enabling them managing the affairs of the projects in an informed way. The study further established that most of the project's monitoring meetings were held through holding of members meeting. This indicates the water project appreciates the need of involving the project members to participate in the monitoring activities. Participatory monitoring is insightful and conclusive. This is in line with World Bank, (2000) which suggest that project monitoring would be of little or no use if it is not consistently supported by all the stakeholders towards addressing the sustainability issues of the projects.

Further, the study established majority of the projects held regular project monitoring meetings which ensures project sustainability through helping the projects plan for the future. This indicates that, regulated project monitoring enables the project management teams in planning and guiding the project in the right direction. This is in agreement with Görgens, Nkwazi, and Govindaraj, (2005) who asserts that, effective, participatory and regular monitoring of community development programs can improve management, accountability, and participation, trust, learning, and efficiency and development impacts of community projects. Görgens, Nkwazi, and Govindaraj, (2005) further asserts that, effective, participatory and regular monitoring of community development programs can improve management, accountability, and participation, trust, learning, and efficiency and development impacts of community projects. This was supported by the project findings that established that regular project monitoring ensures project sustainability though helping the

project in future planning. This indicates regulated project monitoring enables the project management teams in planning those guiding the project in the right direction.

5.5 Conclusions of the study

From the study findings and discussion, the researcher concluded that although majority of the water projects had the necessary financial, physical and human resources to sustain their project activities, which are key to the sustainability of water and sanitation donor funded projects.

In relation to beneficiaries' participation in the management and sustainability of respective water project, the researcher concluded that most of the water projects were likely to be sustainable as beneficiary's participation contributed to the sustainability of water projects through enhancing project ownership, completion of projects in time and through ensuring timely repair and maintenance of the projects.

As relates to project management skills and sustainability of donor funded water and sanitation projects, the study concluded that there were adequate project management skills both at the project management and staff level which contributes to the sustainability of water and sanitation donor funded projects.

On project monitoring and sustainability of donor funded water and sanitation project, the study concluded that the presence of strong monitoring systems, regular participatory monitoring meetings adopted by the project results to sustainability of water and sanitation of donor funded projects.

5.6 Recommendations of the study

The following are the recommendations of the study.

i. It is recommended that, there is a need to create awareness to the project members on general issues concerning the water projects. Project vision and mission should form an integral part of the awareness.

ii. Members of the projects should always be included in the determination of the strategic direction of the project.

iii. Water management committees should be trained on all aspects of project management in relation to water projects e.g. financial management, procurement, operations, tariff setting and record keeping.

iv. All projects should adopt basic but comprehensive monitoring system for capturing and storing the project's information to inform the project management and for future reference.

5.7 Suggestions for further research

The following are suggestions for further research;

i. Similar study should be done in other counties for comparison purposes and to allow for generalization of findings on the factors influencing sustainability of water and sanitation donor funded projects.

ii. Other studies should be conducted on the challenges facing the sustainability of water and sanitation donor funded projects in Kenya.

iii. Similar studies should be conducted on the role of government and government agencies in enhancing the sustainability of water and sanitation donor funded projects in Kenya.

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APPENDIX I: LETTER OF TRANSMITTAL

Njuguna Harun Gathiru
P.O Box 1684,
Nanyuki
Dear Respondent,

Ref: Request for participation in research

I am a post graduate student pursuing Masters Degree in Project Planning and Management at University of Nairobi and I am currently carrying out a research on factors influencing sustainability of donor funded projects: the case of water and sanitation projects in Laikipia East District, Laikipia County, Kenya. You are kindly requested to take part in the study. In order to ensure utmost confidentiality do not write your name anywhere in this questionnaire. The findings of this study will be used only for research purpose.

Thank you for your co-operation.

Yours faithfully

Harun Njuguna
L50/60192/2013

APPENDIX II: RESEARCH QUESTIONNAIRE

INFORMED CONSENT AND STATEMENT OF CONFIDENTIALITY

The purpose of this questionnaire is to collect data on the factors influencing sustainability of water and sanitation donor funded projects in Laikipia East District. The information provided through this questionnaire will be used purely and exclusively for academic purpose and will be treated with top most confidentiality. Please feel free to give your answers. Your co-operation and assistance will be highly appreciated.

<table>
<tr><th colspan="4">SECTION A. DEMOGRAPHIC DATA</th></tr>
<tr><td>Name(optional)
…….....
A1. Residence:
A2. Years of Residence:</td><td>A3. Gender
1. Male [ ]
2. Female [ ]</td><td>A4. Age
1. 18-24 years[ ]
2. 25-35 years[ ]
3. 36-49 years[ ]
4. 50-64 years[ ]
5. 65 and above[ ]</td><td>A5. Are you a member of the project management committee
1. Yes [ ]
2. No [ ]</td></tr>
<tr><td colspan="2">A6. If yes to A5 how many years have you been a member of the management committee
1. 1-2 years[ ]
2. 3-4 years [ ]
3. Above 5 years[ ]</td><td colspan="2">A7. What is your highest level of school/level completed?
1. Never[ ]
2. Primary incomplete[ ]
3. Primary complete [ ]
4. Secondary incomplete[ ]
5. Secondary complete[ ]
6. College [ ]
7. University level [ ]</td></tr>
<tr><td colspan="2">A8. What is your occupation?
1. Pastoralist[ ]
2. Pure farming[ ]
3. Agro-pastoralist[ ]
4. Small scale business [ ]
5. Charcoal/firewood vendor[ ]
6. Trade (e.g. carpentry, masonry etc) [ ]
7. Casual labour [ ]
8. Employment [ ]
9. Other (specify) …….</td><td colspan="2">A9. What is your average income range per month (from all sources)
1. Less than 2500 [ ]
2. 2501 – 5000 [ ]
3. 5001 – 7500 [ ]
4. 7501 – 10000 [ ]
5. More than 10,000 [ ]</td></tr>
<tr><th colspan="4">SECTION B: PROJECT IDENTIFICATION INFORMATION</th></tr>
<tr><td colspan="2">B1. Location</td><td colspan="2">B2. Sub location</td></tr>
<tr><td colspan="2">B3. Name of project:</td><td colspan="2">B4. Year started:</td></tr>
</table>

SECTION C: INSTITUTIONAL CAPACITY AND SUSTAINABILITY OF WATER AND SANITATION DONOR FUNDED PROJECTS			
C1	How can you rate your project's capacity to deal with project related issues	Very Good	1
		Good	2
		Fair/Average	3
		Poor	4
		Very poor	5
C2	Explain the response in C1 above		
C3	Does your project train its members	Yes	1
		No	2
C4	If yes what areas has the project trained members on?	Project management	1
		Conflict resolution and management	2
		Repair and maintenance	3
		Financial management	4
		Resource mobilization	5
		Others specify	6
C5	Does the project have stable sources of funds to fund its projects	Yes	1
		No	2
C6	If yes what is the major source of funds	Members contribution	1
		Water charges	2
		Support from donors	3
		Support from government agencies such as WRMA, MoW, Water Trust Fund etc	4
		Others specify	6
C7	Does your project have staff	Yes	1
		No	2
C8	If yes to C7, how may staff	Male:…… Females:……..……	
C9	Does the project have an operational project office	Yes	1
		No	2
C10	Does your project have a strategic plan/ annual plans	Yes	1
		No	2
		Do not know	3

C11	If yes who was involved in its preparation	All members	1
		Committee members only	2
		Committee members and other members	3
		Committee members and stakeholders	4
		Committee members, stakeholders and other members	5
		Project Staff	
		Others (specify)	
C12	Does the project have a documented vision and mission statement	Yes	1
		No	2
		Do not know	3
C13	If yes to C17 is the vision and mission of the project known by all members	Yes	1
		No	2
C14	How does the project deal with conflicts within its membership		
C15	Does the project involve other stakeholders in its activities	Yes	1
		No	2
C16	If yes to C15 how are they involved		
C17	How can you rate your project in terms of addressing members water and sanitation related needs	Very Good	
		Good	
		Average	
		Poor	
C18	Give reason for the response in C21 above		
C19	In your opinion does institutional capacity contribute towards sustainability of your water project?	Yes	1
		No	2
		Do not know	3
C20	If yes, how does institutional capacity contributes towards sustainability of your water project?		

SECTION D: BENEFICIARY PARTICIPATION AND SUSTAINABILITY OF WATER AND SANITATION DONOR FUNDED PROJECTS			
D1	What is the main source of water for members of your household	Piped water service provider e.g. NAWASCO.	1
		Open well.	2
		Protected well	3
		Borehole	4
		Fetch from Spring / river / stream.	5
		Fetch from Pond	6
		Rainwater	**7**
		Piped project water	
		Others. (specify)	
D2	Who was involved in the its installation of the water projects?	Beneficiaries contribution	1
		Support from donors	2
		Support from government and government agencies e.g. Arid Land, Water Trust Fund etc	3
		Others (specify)	
D3	Do you pay for water	Yes	1
		No	2
D4	If yes how much do you pay month	(Code actual)	
D5	Have you ever participated/contributed in any way towards management and maintenance of the main source of water	Yes	1
		No	2
D6	If yes, how did you participate/contribute	Was consulted during the installation phase through meetings	1
		Contributed both in cash and in kind towards the installation	2
		Have been or still is a committee member/leader	3
		Payment of water use	4
		Others specify	5
D7	In your own opinion what is the one main reason does project beneficiary contribution/participation contributed towards sustainability of the water project	Completion of project on time	1
		Ownership of the project by members	2
		Timely repair and maintenance of broken pipes	3
		Attracted more support for up scaling of the project	4
SECTION E: PROJECT MANAGEMENT SKILLS AND SUSTAINABILITY OF WATER AND SANITATION DONOR FUNDED PROJECTS			

E1	Does your water project have a water committee	Yes	1
		No	2
		Do not know	3
E2	In your opinion how active is the water committee	Not active	1
		Quite active	2
		Very active	3
E3	Who is involved in the day to day management of the water project	Water committee	1
		Employed staff	2
		Volunteer member(s)	3
		WRUA	4
		No one	5
E4	Has the person(s) involved in the day to day management of the water project been trained on water management	Yes	1
		No	2
		Don't know	3
E5	In your opinion, do the person(s) involved in water project management have adequate water management skills	Yes	1
		No	2
E6	If no why		
E7	What are the main challenges to water project management in your project	Intentional breakage and blockage of water pipes	1
		Conflicts among water users	2
		Unequitable water rationing and distribution	3
		Poor leadership	4
		Others (specify)	
E8	In your opinion does project management skill enhance the sustainability of your water project?	Yes	1
		No	2
		Do not know	3
E9	If yes in E8, how do project management skills enhance the sustainability of your water project?		
SECTION F: PROJECT MONITORING AND SUSTAINABILITY OF WATER AND SANITATION DONOR FUNDED PROJECTS			
F1	Does your project have a monitoring system?	Yes	1
		No	2
		Do not know	3
F2	Does your water project have regular project monitoring meetings?	Yes	1
		No	2

		Do not know	3
F3	How often is the monitoring done	On monthly basis	1
		On quarterly basis	2
		On semi annual basis	3
		Once annually	4
F4	In your opinion how can regular project monitoring be used to enhance the sustainability of your project		
F5	How is the monitoring done	Through committee field visit	1
		Through holding of members meeting	2
		Through involvement of other stakeholders	3
		Through staff field visit and reporting	4
F6	In your opinion how has the project monitoring contributed towards the success and sustainability of your project	Has enabled timely maintenance and repairs	1
		Has enabled solve water related conflicts	2
		Have enhanced equitable distribution of water resources	3
		Has enhanced better utilisation of available water resources	4
		Nothing positive has been realised	5

Thank you for your time.

APPENDIX II: INTERVIEW GUIDE FOR KEY INFORMANTS

Details of the respondent

Position of the respondents……

1. In your opinion are the water projects in a position to deal with water related issues?
2. Do the water projects train the project member?
3. Are the water projects able to meet their financial requirements?
4. Are the project staffs adequately skilled on water management?
5. Does the project have operational and financial plans/ strategic plans?
6. In your own opinion how do the projects deal with internal conflicts?
7. In your own assessment, are the water projects able to meet the members water related needs?
8. In your opinion what is the role of institution capacity in relation to sustainability of the water projects?
9. In your own opinion, how do the project members participation before, during and after implementation of the projects?
10. What is the relation between beneficiary participation and sustainability of the water projects?
11. In your opinion, are the person(s) involved on the day to day management of water project have adequate water management skills?
12. In your opinion what are the main challenges to water management in the area?
13. In your own opinion, how do project management skills influence sustainability of water project?
14. Do the water projects have project monitoring systems?
15. In your own opinion how do the projects monitor their project performance?
16. In your opinion are the members involved during the monitoring of project performance?
17. In your own opinion, how does project monitoring influence sustainability of water projects?