

**FACTORS INFLUENCING SUSTAINABILITY OF DONOR FUNDED
COMMUNITY WATER PROJECTS: A CASE OF KITUI CENTRAL
CONSTITUENCY, KITUI COUNTY, KENYA**

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DECLARATION

This research project report is my original work and has not been presented for an academic Award in any other University or institution of higher learning

Signature.....Date.....

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This research project report has been submitted for examination with my approval as the University supervisor.

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DEDICATION

I dedicate this work to my father Timothy Mutonga Mutwiwa for providing for my education, to my mother Mary Muvinya Mutonga, my wife Margret Keli and my three children Edwin, Shirley and Brian for their support and encouragement during my study for Masters Degree.

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ABBREVIATIONS AND ACRONYMS

ASAL	-	Arid and Semi-Arid lands
CBWSG	-	Community Based Water Supply Groups
DWO	-	District Water Officer
GOK	-	Government of Kenya
NEMA	-	National Environmental Management Authority
NGO	-	Non Governmental Organization
SMES	-	Small and Microenterprise Scheme
GDP	-	Gross Domestic Product
ILO	-	International Labor Organization
CBO	-	Community Based Organization
UNICEF	-	United Nations Children's Education Fund
MDG	-	Millennium Development goals
FAO	-	Food and Agricultural Organization
UN	-	United Nations

ABSTRACT

The purpose of this study was to investigate the factors influencing sustainability of donor funded community water projects in Kitui central constituency, Kitui County, Kenya. The study sought to establish how community participation influences sustainability of water projects funded by donors, to investigate how management affect sustainability of water projects funded by donors, to determine how financial administration influence sustainability of water projects funded by donors in Kitui central constituency. Data for this study was collected using the questionnaires as the main research instruments. The questionnaires were administered to 35 respondents composed of the 31 chairpersons and 4 coordinators. The collected data was analyzed using both descriptive and inferential statistics. Simple random sampling was used to select the respondents to be included in the study. The study established that most of the community members were not involved in the implementation of the community projects in all the phases and that there was a strong positive correlation between community participation and sustainability of donor funded community projects. Secondly, the community capacity building was not fully undertaken prior to the implementation of the water projects and as a result the community lacked appropriate skills for management, lacked information of policy guidelines on the management of water projects and there was poor planning by the management. There is a strong positive correlation between community management and sustainability of donor funded community projects. Finally the study established that the most of the community financial records are never audited. There is also a strong positive correlation between community financial management and sustainability of donor funded community projects. The Government should train the community leaders on the management of donor funded community water projects before implementation. The donors should frequently audit the books of accounts for the community projects.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The Millennium Development Goals (MDG), strive to reduce by 50% by 2015 the percentage of world's population without access to drinking water and basic sanitation. Presently around 2.8 billion people (more than 40% of world population) live in areas faced with some form of water scarcity and 1.6 billion people live in areas with water but are faced with human, institutional and financial capital challenges (UN, 2008). According to the Kenya Integrated Household Budget Survey, only 49% of Kenya's rural population has access to clean water compared to 83% in urban areas (GoK, 2007) for example, access to water varies from as high as 96% in Nairobi to as low as 14% in Mwingi district. Kenya is below the international water scarcity ratio threshold (1000 m³ per person per year) with only 935m³ available per person per year (FAO, 2007) and population growth forecast to reduce this figure to 359m³ by 2020 (UN-Water, 2006).

The water act (2002) was a key milestone towards improving access to drinking water to most of the Kenyan population. In many countries such as Kenya the water sector is largely financed by the Government while the country itself depends on unsustainable flows of foreign aid (UNICEF 2012). In order to help ease the ever increasing water shortage in Kenya several donors have initiated community water projects especially in ASAL areas. Despite the high number of projects being initiated by donors, determination of sustainability has been pegged on how the projects are popular enough to attract financial support. Achieving sustainability of water projects has continued to be a challenge to many southern Sahara governments

and donors. To many, launching of community water projects has been termed as development without considering sustainability of the said project. In the past, the term development has been used to imply sustainability however over the last few years, sustainability itself has come to the forefront of development thinking. Bumgardner *et al.* (1971) has stressed the importance of building institutions to support, strengthen and perpetuate technological innovation. How we define sustainability is of course important in setting parameters which are then used for measuring it and in understanding the determinant factors which may contribute to, or work against the likelihood of sustainability. As Hodgkins, (1994) notes, “one of the problems of objective quantification of sustainability is the fact that the adjective “sustainable” has strong normative connotations. That is to say, that different people, or different groups of people (users of water, donors, national governments, local private sector companies and research institutions) will have different perceptions of sustainability based on the relative value of achieving the various goals”. When sustainability first entered the lexicon of the water sector, it was primarily associated with financial aspect of service delivery and the need to make projects self-sufficient, even in low income communities, by highlighting the need for users to contribute to cost-sharing (Black, 1998).

In an internal survey of donor experience, the USAID Development Assistance Committee (USAID 1988: OECD 1989) described sustainability as the “ultimate test of development efforts”. According to the Brundtland commission report (1987) sustainability is defined as “meeting the needs of the present without comprising the ability of future generations to meet their own needs”. “Sustainable” means to ensure, to last and to keep being. Sustainable development is about well marshalling

resources to ensure that some measure of human well-being is sustained over time. According to Pearce and Atkinson (1993), the objective is to take actions which will not impair future generation from living at least as well as the present and hopefully better. Projects are known to be implemented in a particular order which according to Roark *et al.*,(1993) follows the following cycle of activities; Planning and design, start-up, implementation, phase out and project completion. Donor assistance may continue after construction is completed or cease before the infrastructure is completed. In case of donor funded water projects, the cessation of donor funding is the milestone in defining pre- and post-project boundaries.

The reason why many of the projects become unsustainable is not because of technical issues but are related to management, social relationships and community dynamics(ACF,2007).Post-project assessment of sustainability should take place after projects is completed to allow the local community to become self-reliant. Assessment should be carried out several years after the end of the project for a valid judgment as to the direction of the benefit stream and an assessment of sustainability. While it is important to put increasing pressure to make sure that community water projects are sustainable, humanitarian actors should be honest with donors, other sector actors and communities, about the challenges that are faced in trying to support sustainable projects and the additional challenges that are faced in vulnerable contexts.

1.2 Statement of the Problem

Sustainability of community water projects and the benefits they deliver is one of the overriding concerns of the water sector. Every year millions of shillings are invested by Kenyan government and international donor agencies alike in community water projects implementation. Despite the ever increasing attempts to tackle the problem, many still fail to maintain the flow of expected benefits over their expected lifetime of 15 or even 20years (World Bank).Although there are few systematic studies of this problem, many practioners estimate that at any given moment a systematic proportion of community water projects in developing countries maybe inoperable or abandoned completely. WNP report (2003).The sustainability of water projects has been considered from a livelihood perspective, through which greater emphasis is placed on the role of water within wider household livelihood strategies (Nicol, 2000).In recent years there has been an increasing focus on understanding of the design and implementation of water projects as part of efforts to make projects more successful and work more efficiently.

However, Schouton and Moriarty, 2003 notes that a system that meets the needs of 80% of the population while leaving the poorest 20% un-served cannot be counted a success. Currently, there is an increasing recognition that the majority of communities was unable to manage their own water supply system without some form of external assistance (Rosenweig,(2000); Blackborough,(2001);IRC;(2001).Research has shown that water projects in sub-Sahara Africa often demonstrate low levels of sustainability Gebrehiwot (2007).The key causes for this include inappropriate policy or legislation, insufficient institutional support, unsustainable financing mechanisms, ineffective management systems and lack of technical back stopping Niyiet *al.*(2007).In spite of

general agreement that sustainability of improvements in quality of life and valued benefits should be the goal of development assistance, there continue to be many water projects undertaken by donors which fail to sustain benefits to the community in Kitui central constituency.

1.3 Purpose of the study

The study analyzed the factors influencing sustainability of donor funded community water projects in Kitui central constituency, Kitui County, Kenya.

1.4 Objectives of the study

- i. To determine the extent to which the level of community participation influences sustainability of donor funded community water projects in Kitui central constituency?
- ii. To establish the extent to which management influences sustainability of water projects funded by donors in Kitui central constituency.
- iii. To determine the extent to which financial administration influence sustainability of water projects funded by donors in Kitui central constituency.

1.5 Research questions

- i. To what extent does the level of community participation influence sustainability of donor funded community water projects in Kitui central constituency?
- ii. To what extent does Management influence sustainability of donor funded community water projects in Kitui central Constituency?
- iii. To what extent does financial administration influence sustainability of donor funded community water projects in Kitui central constituency?

1.6 Hypotheses of the study

1. **H₀** : There is no significant relationship between the level of community participation and sustainability of donor funded community water projects in Kitui Central constituency.

H₁: There is significant relationship between the level of community participation and sustainability of donor funded community water projects in Kitui Central constituency.

2. **H₀**: There is no significant relationship between management and sustainability of donor funded community water projects in Kitui Central constituency.

H₁: There is significant relationship between management and sustainability of donor funded community water projects in Kitui Central Constituency

3. **H₀**: There is no significant relationship between financial administration and sustainability of donor funded community water projects in Kitui Central Constituency.

H₁: There is significant relationship between financial administration and sustainability of donor funded community water projects in Kitui Central Constituency.

1.7 Significance of the study

The study provided donors with useful information regarding reason for failure or success of donor funded water projects. The information is therefore being integrated in current projects or future projects to ensure their sustainability.

Information from this study is also being utilized by both the community and donors to address the sustainability challenges and plan better ways of implementing sustainable donor funded water projects. The study is important for future researchers and academicians as it will provide areas for further future research and also contribute more materials to the existing literature.

1.8 Limitations of the study

Some respondents might have given socially “correct” answers to please the researcher just in case they had egocentric motive with high expectations to gain. The area under study was vast and there was a challenge of distances to reach the respondents where they are. This was however overcome by engaging research assistants.

Due to the diversified community organizations benefiting donor funds, there was little homogeneity in thoughts and orientation concerning challenges facing their sustainability of the donor funded projects. The researcher may have the challenge of time because of other assignments from the employer. The researcher may be limited by resources and therefore the research will cover only one constituency.

1.9 Delimitations of the study

The study was designed to investigate the factors influencing the sustainability of donor funded community water projects in Kitui central constituency, Kitui County, Kenya. The study focused on the influence of three issues namely; community participation, management effects on sustainability and the effect of financial management. However there are many other factors which influence the sustainability of water projects.

The study was carried out among those projects which are donor funded projects in the constituency however there are still other water projects funded by the government and private investors.

1.10: Assumptions of the study

Assumptions of the study were that the community members in charge of the water projects were accessible to respond on the questionnaires. It was assumed that there was no security challenges in the area during the research process. The study ignored the minor factors that had indirect impact on the project sustainability. It assumed that the weight of project sustainability variable shall remain constant throughout the duration of the project life. It assumed no stage hosting by respondents while they were giving the basic information for the investigation. The study assumed statistical model used in data analysis shall hold constant and yield reliable results for the intended analysis. The study assumed that the sampled populations had conveniently and effectively represented the whole population.

1.11 Definition of Significant terms

Sustainability	Refers to where community water projects are managed efficiently with adequate resources, beneficiaries are involved during project implementation and there is transparency in financial administration.
Donor	Refers to an organization that provides resources for community project implementation.
Project	Refers to a unique process consisting of a set of coordinated and controlled activities with a start and finish dates undertaken to achieve specific objectives conforming to specified requirements under the constraints of time, cost and resources.
Community water project	Refers to a water scheme serving water to the community.
Trust	Refers to an Organization registered as a legal trust where trustees and beneficiaries are clearly defined
Participation	Refers to involvement or contribution towards implementation of a project
Management	Refers to Day to day running of a project for the benefit of a community.
Water Resource Users Association	Refers to group of community members registered under Societies act with registrar of societies for the purpose of managing the water resources and conserving the catchment and riparian areas

1.12 Organization of the study

The study was organized in three chapters: Chapter one was introduction of the study and it consisted of the background to the study: statement of the problem, purpose and objectives of the study, research questions, hypothesis, significance, limitations, delimitations and definition of significant terms. Chapter two was the Literature that supported the study and comprised of introduction of the chapter's content, Literature review was presented according to the objectives of the study and the conceptual framework was presented at the end of the chapter.

Chapter three was the research methodology and it consisted of the research design, target population, sampling procedure and sample size, research instruments and reliability and validity, data collection procedures and analysis and ethical consideration of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this section the study provided the needed background information on factors influencing sustainability of donor funded community water projects in Kitui Central Sub County.

2.1.1 Concept of Sustainability defined

According to Abrams, 1998 sustainability is whether or not something continues to work over a period of time. However, Sugden (2003) states that sustainability has become one of the most over used and abused words in the development vocabulary. The term “sustainability” refers to something which can be kept going but it also refers to resource use and lifestyles which do not damage resources or society (Merriam Webster, 2010). Hodgkin, 1994 defined sustainability as the ability of a development project to maintain or expand a flow of benefits at a specified level for a long period after project inputs have ceased. This definition appears to be more operational and more scholars have even given definitions which appear to be narrow and specific. For instance, in a study of three African countries, Bossert (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 defines it as outcomes at least three years after project termination. Honadle and Van Sant (1985), in a study of sustainability of integrated rural development projects, defined it in terms of the percentage of projects initiated, goods and services that is still delivered and maintained five years past the termination of donor resources. His definition appears empirically verifiable but in

practice it was complicated by multiple outputs and lack of agreement about the verification of “delivery” and “maintenance”. Some definitions consider a criterion of sustainability that the beneficiaries cover all costs after donor assistance has ended.

2.2 Community Participation and Sustainability of Water Projects Funded by Donors

Community participation is a process by which communities are empowered to make effective decisions (Harvey & Reed, 2007). Brayer, Specht and Torezyner (2001) defined participation as a means to educate citizens and to learn their competence. Armitage (2003) indicated that community participation is a process by which citizens act in response to public concerns, voice their opinions about decisions that affect them and take responsibility for changes to their community. Admassu et al (2002) notes that involvement of the community is crucial for sustainability of water supply systems. In addition Chapel (2005) indicates that community support increases project efficiency; therefore he recommended that there should be consultation with the community during project planning or beneficiary involvement in the management of project implementation or cooperation to ensure sustainability.

Engaging the community in its own development ensures that the proposed development will better target people’s needs, incorporate local knowledge, create grassroots capacity to undertake other projects and maintain facilities, distribute benefits equitably and help lower costs. (Uphoof, Cohen & Goldsmith, 1979) To achieve outcomes through participation, considerable investment in time and resources by parties facilitating and engaging in the process are required. Often pressure for delivery of outputs may compromise the process. Unfortunately

development progress is measured not only by developers but also by public opinion formers, by the speed in which tangible results are produced (Butes & Rensburg, 2000).

According to UNICEF (1999) and USAID (2009), if the operation and maintenance program of water project is designed by the community, the program will function much better than when it is designed by outsiders. Empowerment of community in management of donor funded water projects will lead to positive participation in the sustainability and also during the stages of planning, implementation, development and maintenance of projects. This situation is supported by Gebrehiwot (2006) where he states that water projects are more or less demand responsive to the degree that the beneficiaries make choices and carry out resources in support of the choices. Davis and Liyer (2002) further indicate that this community member's contribution may take the form of money, labor, materials, equipment or participation in project related decision making and meetings.

According to Cartel et al (1999) the frequent failure of water supply projects have been attributed to number of flaws in the projects among them lack of participation by the community. However the participation process must have a time limit since beneficiaries too at times grow impatient with endless discussion without any forthcoming results. Essentially there has to be a balance between the "process" and the "product". If too much time is spent on the process, the beneficiaries may begin to lose interest as they feel it is only a "talk shop" with no tangible results. Alternatively if adequate engagement in the process too quickly without time for the process, the beneficiary may have adequate a product that they do not want or cannot sustain.

2.3 Management and Sustainability of Water Projects Funded by Donors

Community management is where people are organized together to bring about an improvement in their lives that could not have been attained individually (WHO, 1996).Doe and Kahn, 2004 state that community management is the vehicle through which collective action is exercised for common good. According to WHO, 1996 the wide spread of community management, by building capacity of communities to address their own need frees government to concentrate on more fundamental issues. There is a school of thought that community management was a concept developed predominantly in the west, where a tendency to idealize communities in low income countries exist(Harvey & Reed,2007).It is suggested that the community management model was readily accepted by different actors to meet their respective agendas (IRC,2003;Loockwood,2004).While practioners may have different views on how and why community management is widely accepted, it is clear that it is important for donors to enlighten members of a community on various skills in order to boost sustainability of water project during and after exit of the donor.

General principles of community management are; participation, control, ownership and cost sharing (Lockwood,2004).To ensure effective community management of rural water projects, to achieve sustainability both internal and external factors must be taken into consideration as both make important contributions to the success and or failure of water projects. Internal factors such as lack of community cohesion, lack of management skills, unrepresentative water committees, technical issues, strong traditions, misplaced priorities and financial problems must be given priority under community management (Schouten & Moriarty,2003).Community management is best achieved through water committee. A water committee is a voluntary body,

selected by the community to represent it in discussion making on all aspects of local water management. If a committee is going to function smoothly and meet the needs of the community it represents, it should represent all segments of the community; better off and poor, male and female, groups living in different areas (Bolt and Fonseca, 2001).

In order to ensure effective working by the water committee, such committees require legal backing, this will enable them to open bank accounts or enter into contractual agreement. This will ensure that sustainability of donor funded water projects is not at stake. In addition the committee members are no longer personally liable for debts, contracts and other obligations. This increases the people willingness to become committee members (Bolt & Fonseca,2001).To ensure sustainability, a projects manager need to be recruited in addition to the water management committee. A project manager has to manifest not only project management skills (Kirsch, 2000) but also technical and expertise as required by the project (Thite, 2001).

2.4 Financial administration and Sustainability of water projects funded by donors

Every year millions of dollars are invested by national government and international donor agencies alike in project implementation and despite, ever increasing attempts to tackle the problem, many projects still fail to maintain the flow of expected benefit over their intended lifetime of 15 or even 20 years (Lockwood, 2004).Financial management is very important as far as operation and maintenance of donor projects is concerned. The aspect of financial management also entails setting of water tariffs.

Many donor projects fail to be sustainable for a long period due to high tariffs introduced by management committee or poor financial management skills.

Continuing transparency on income and expenditure, book keeping and accounting are essential aspects in sustainability of projects (Bolt and Fonseca, 2001). This particular aspects of financial management has led to most donor projects to collapse due to underhand techniques used by water committees. According to Bowr (2007) full cost recovery of operation and maintenance costs attire required to ensure the sustainability of rural water supply schemes. Many community water projects struggle with issues of tariff setting, accounting, revenue collection, billing, record keeping and transparency. Financial sustainability is often an elusive goal for many projects.

2.5 Conceptual Framework

The identified variables in the literature review were conceptualized as shown in figure 1

Independent variables

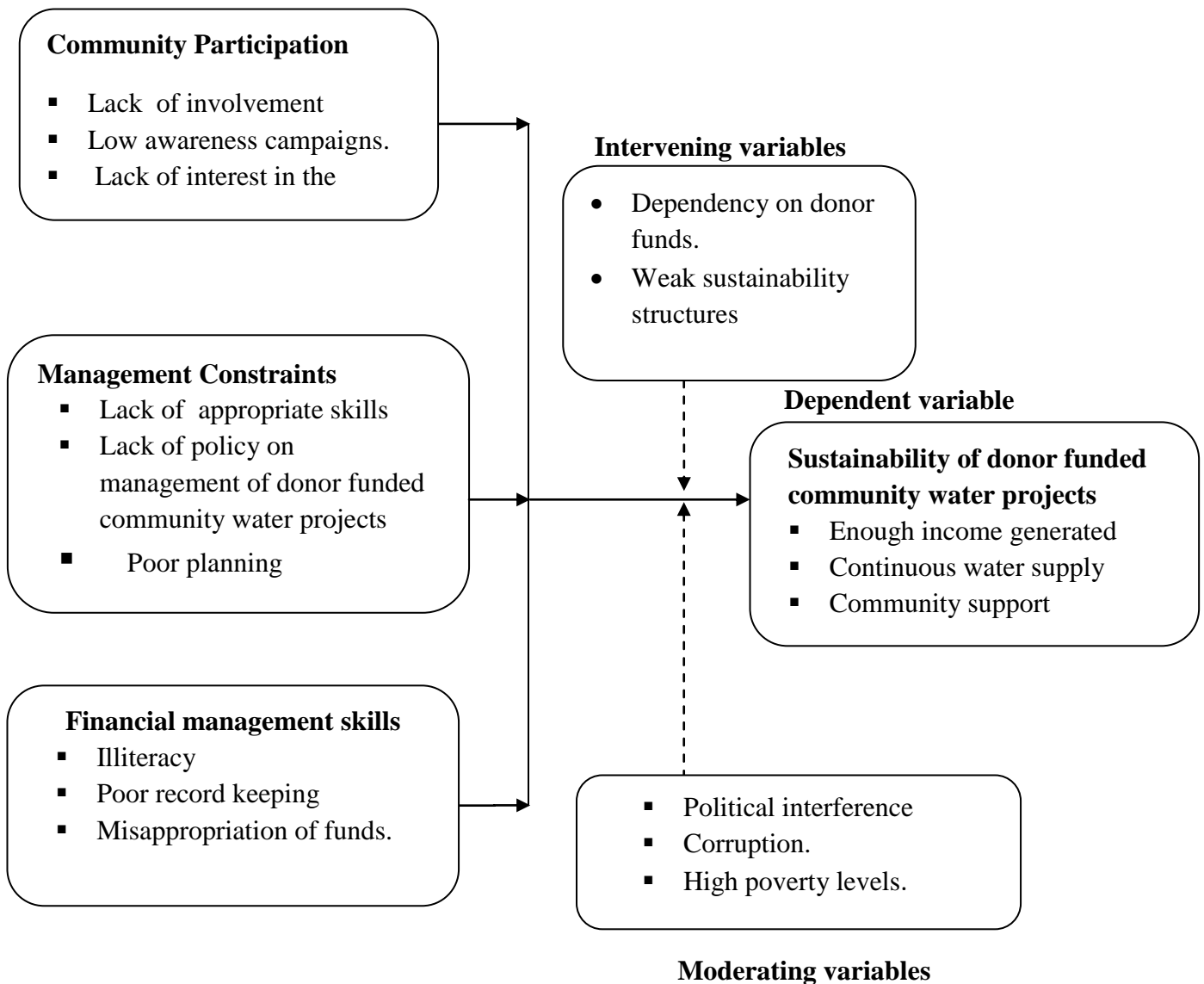


Figure1: Conceptual framework

A conceptual definition is an element of the scientific research process in which a specific concept is defined as a measurable occurrence or in measurable terms. Basically gives one the meaning of the concept. According to Mugenda and Mugenda (2003), conceptual framework is the conceptualization of the relationship between variables in the study and shows the relationship graphically or diagrammatically. According to the framework of my proposed study the independent variables were community participation, community management and financial management skills while the dependent variable is the sustainability of donor funded community water projects.

Dependency on donor funds and weak sustainability structures are moderating variables in the study, that is, variables which changes (Increases or decreases) the otherwise established effect of the independent variables upon the dependent variables.

Intervening variables are the variables which might affect the relationship between the dependent and independent variables, though it is hard to establish the actual degree of effect on the dependent variable. They include political interference, corruption and high poverty levels

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter consists of the research designs, target population, sampling procedures and sample size, research instruments, reliability and validity of the instruments, data collection procedures, data analysis, logistical and ethical considerations and Operationalization of the study variables.

3.2 Research Design.

This study adopted the descriptive survey design. Descriptive survey design was selected because the study entails asking a large number of people questions (in form of questionnaires) about their opinions and ideas, and even describe what the people say. This study also used descriptive survey design since the variables were not to be manipulated, and there was an opportunity to explore and probe the respondents for more information. The major purpose of descriptive survey research design is a description of the state of affairs as it exists at present. (Kothari, 2003) According to Kerlinger (1973) descriptive survey design is a branch of social scientific investigation which studies large and small populations or universe by selecting and studying sample chosen from the population to discover the relative incidence, distribution and interrelations. The descriptive survey allowed collection of large amounts of data from the target population. The study used descriptive because it ‘described what was’ by use of quantitative and qualitative methods.

3.3 Target Population

Population is the aggregate of all that conforms to a given specification (Mugenda & Mugenda 2008). This study targeted 104 community water projects that have benefited from donor funds in Kitui central constituency, Kitui County (Unicef Report 2012) and 14 project coordinators. The respondents targeted by the study included 104 chair persons of the community water projects and 14 project coordinators.

3.4 Sampling procedures and sample size.

The researcher used simple random sampling to select 30% of the community water projects chair persons for the sample of this study from the target population. Thus the sample size was 31 chairpersons from the 31 community water projects groups as stated by (Mugenda & Mugenda, 2003) who have recommended 30% of a small target population to be representative sample size for a study. The study also interviewed 4 project coordinators making a sample size of 35 respondents.

3.5 Research instruments.

The questionnaires were used as the main research instruments. They were structured with both closed ended items and open ended questions. The researcher arranged with all the community members involved to fill the questionnaires. The questionnaires had three sections; section 1 introduction section, section II the personal details of the respondents and the questions in groups of various study variables. The questionnaires with closed ended items only were used in order to ascertain collection of numerical data and consistency of data elicitation from the selected community members. Most questionnaire items were of the five-point likert rating scale of the range (1-5 for example 1-strongly agree, 2 – agree 3- undecided, 4-

disagree; 5-strongly disagree). Data was analyzed using Descriptive statistics (Kasomo, 2006).

The preference for questionnaire for use was based on the fact that respondents were able to complete them without help, anonymously, and it was cheaper and quicker than other methods while reaching out to larger sample (Bryman, 2008; Cohen et . al 2007).

3.6 Data collection procedure.

The researcher obtained a permit from the National Council for Sciences and technology in order to be allowed to collect data. The community members were pre-visited by the researcher to establish rapport with them before the actual data collection date, also to allow familiarizing with the respondents. The researcher self-administered the questionnaires to the respondents to fill in the data and the researcher collected the filled in questionnaires before having each of the selected community participants. He was assisted by two research assistants.

3.7 Validity and reliability of Instruments.

3.7.1 Validity of Instruments.

The study adopted content validity from the experts from the school of distance learning in the University of Nairobi so as to ensure the test items represent the content that the test is designed to measure. Research tools are valid depending on how the data collected is related in terms of how effective the items have sampled significant aspects of the general objective of the study (Kasomo 2006). Content

validity of the instrument was determined by experts in the University of Nairobi who will look at the measuring techniques and coverage by the study.

Lecturers from the University of Nairobi ascertained the validity of the research instruments. The corrections identified were incorporated in the instruments so as to increase the validity (Mugenda & Mugenda, 2003).

3.7.2 Reliability of Instruments`

The researcher used split-half method so as to establish reliability of the instruments through a pilot study. During the pretest the questionnaire was administered on a random sample of 22 sampled community water projects from one of the three administrative units in Kitui central constituency. The participants in the pilot study were not being included in the actual sampling for the study. The data values was operationalized and split into halves using 11-odd/11-even item numbers' half divide. A correlation coefficient was calculated using Pearson product moment correlation formula. The correlation coefficient calculated was 0.82 which is greater than 0.75 so that questionnaire have a sufficient high pre-test reliability (Orodho, 2005).

3.8 Data analysis.

The researcher analyzed data using both descriptive and inferential statistics which includes; frequency distribution; percentages and averages and correlation analysis. Statistical tally system was used to generate frequency counts from the responses so as to prepare frequency distributions. Percentages in the 5-point rating Likert scale response out of the total study sample responses per item were calculated. Averages will also be calculated in respective items. As a measure if central tendency, Average

was used to decide the concentration of responses within the 5 point Likert rating scale range.

Averages were support the calculated percentage in depicting the general trend of the study finding and a correlation coefficient between the factors influencing sustainability of donor funded community water projects. The findings were presented in frequency distribution tables. Each table was followed by brief explanations, inferences, and interpretations of the finding from the earlier related reviewed literature with the aim of bridging the research gaps through seeking of the study problem (Orodho, 2005). The hypothesis was tested using correlation coefficients.

3.9 Ethical and logistical consideration of the study.

Authorization for research was issued by the water undertaker, TANATHI Water services Board. Informed consent was fulfilled by seeking participant's permission before administering the questionnaires to the sampled community members in the community.

The researcher and his two research assistants pre-visited the community water projects to establish rapport. The researcher further ensured that the information to be obtained from the respondents was confidential and that no name of the respondents was used to refer the respondents.

Table 3.1: Operationalization Table

Objectives	Independent variable	Dependent variable	Indicators	Measurements	Level of scale	Tools of analysis.
To establish how Community participation influence sustainability of donor funded community water projects.	Community participation	Sustainability of donor funded community water projects	-Increased participation	Number of community water projects surviving	Nominal	Descriptive statistics.
			-Improved sustainability		Nominal	Inferential statistics
To assess how management constraints influence sustainability of donor funded community water projects.	Influence of management in the sustainability of donor funded community water projects.	Sustainability of donor funded community water projects.	-Improved management of community water projects	Increased number of community water projects	Nominal	Descriptive statistics.
			-Access to water		Nominal	Inferential statistics.
To determine the influence of financial skills in the sustainability of donor funded community water projects.	Financial management skills	Sustainability of donor funded community water projects.	-Improved management and utilization of donor funds	Decreased collapse of donor funded community water projects	Nominal	Descriptive statistics
						Improved record keeping

CHAPTER FOUR

DATA ANALYSIS,PRESENTATION,ENTERPRETATION AND

DISCUSSION OF THE FINDINGS

4.1 Introduction

This chapter presents data analysis and interpretation following research objectives. The purpose for this study was to analyze the factors influencing sustainability of donor funded community water projects in Kitui central constituency, Kitui County, Kenya. The study sought to establish how community participation influence sustainability of water projects funded by donors in Kitui central constituency, to investigate how management affect sustainability of water projects funded by donors in Kitui central constituency, and to determine how financial administration influence sustainability of water projects funded by donors in Kitui central constituency.

The collected data was analyzed using both descriptive and inferential statistics. For descriptive statistics, frequency distribution tables showing responses and percentages were constructed while in inferential statistics correlation tables were generated from coded data using Statistical package for social scientist (spss) version 20 to test the relationship between independent and dependent variable. This was followed by data interpretation and discussion.

4.2 Questionnaires return rate

Questionnaire return rate is the proportion of the sample that participated in the survey and returned their questionnaires as intended by the researcher. The results on questionnaire return rate are presented in Table 4.1

Table 4.1: Questionnaires return rate

	Frequency	Percent	Cumulative Percent
Returned	35	100.0	100.0
Not returned	0	0.0	100.0
Total	35	100.0	

Table 4.1 shows that all (100%) of the questionnaires were returned by respondents under this study. This shows that the researcher had good rapport with the respondents and that the respondents were taking the research seriously. Also the researcher seems to have made a good follow up of the distributed questionnaires which enabled her to get back all the questionnaires.

4.3 Respondents distribution by gender

The respondents were asked to indicate their gender with the aim of establishing whether the study was gender sensitive and to establish if gender influenced donor funding of water projects. The results were shown in Table 4.2.

Table 4.2: Gender distribution of respondents

	Frequency	Percent	Cumulative Percent
Male	21	60.0	60.0
Female	14	40.0	100.0
Total	35	100.0	

Table 4.2 shows majority (60%) of the respondents were male while (40.0%) were female. This indicates that the one third gender rule was applied in this research which gave a good representation of each gender. This is likely to lead to better research results.

4.4 Age Distribution of respondents

The researcher sought to establish the age distribution for the respondents. This was to determine how the age of the respondents was distributed among the committee members of the water projects.

Table 4.3: Age distribution of respondents

	Frequency	Percent	Cumulative Percent
Below 18 yrs	1	2.9	2.9
19-24yrs	3	8.6	11.4
25-30yrs	3	8.6	20.0
31-35yrs	1	2.9	22.9
Above 35yrs	27	77.1	100.0
Total	35	100.0	

Table 4.3 shows that majority of the respondents were above 35 years making 77.1 percent. This shows that the respondents were not in the youth bracket and therefore were mature enough to manage the donor funded water projects.

4.5 Respondents position in the community water project

The researcher sought to establish the respondents' position in the community water project. The responses were presented in Table 4.4

Table 4.4: Position in community water project

	Frequency	Percent	Cumulative Percent
Chairperson	10	28.6	28.6
Secretary	7	20.0	48.6
Treasurer	10	28.6	77.1
Member	7	20.0	97.1
Beneficiary	1	2.9	100.0
Total	35	100.0	

Majority of the respondents interviewed were Chairperson and the treasurer each with 28.6% making a total of 57.2%. This is because they are more directly involved in the daily running of the projects and therefore were in a better position to give a valid data concerning the running of donor funded projects.

4.6 Beneficiaries of community projects

The researcher sought to establish the number of beneficiaries served by the community water projects so as to establish whether the number has any influence on sustainability. The results were presented in Table 4.5

Table 4.5: Beneficiaries of community projects

Beneficiaries	Frequency	Percent	Cumulative Percent
1-12	1	2.9	2.9
13-20	2	5.7	8.6
21-30	3	8.6	17.1
31-50	5	14.3	31.4
More than 50	24	68.6	100.0
Total	35	100.0	

Table 4.5 shows that majority of the community projects served more than 50 beneficiaries making 68.6%. This is a big number and therefore required huge amount of money for sustainability and this was likely to affect the sustainability.

4.7 Number of years the projects have existed

The researcher sought to establish the number of years the projects had existent so as to determine if the number of years of existence influenced the sustainability of the donor funded water projects. The results were presented in Table 4.6.

Table 4.6: Number of years the projects have existed

	Frequency	Percent	Cumulative Percent
Less than 1yr	1	2.9	2.9
1-3yrs	1	2.9	5.7
4-8yrs	19	54.3	60.0
9-12yrs	4	11.4	71.4
Above 12yrs	10	28.6	100.0
Total	35	100.0	

Table 4.6 shows that majority of the projects had existed for more than 4 - 8 years (54.3%). Most of the others had existed for more than 8 years. This implies that the donor funding had sustained the projects for quite a number of years hence benefitting the community for a longer period of time.

4.8 Community participation and sustainability of donor funded community water projects

The first objective for this study was to establish how community participation influences sustainability of water projects funded by donors in Kitui central constituency. To achieve this objective the respondents were required to indicate whether their participation was required during implementation of projects in all phases. The responses were presented in Table 4.7.

Table 4.7: Community Participation requirement in all phases

	Frequency	Percent	Cumulative Percent
Yes	6	17.1	17.1
No	29	82.9	100.0
Total	35	100.0	

Majority of the respondents (82.9%) indicated that they were not involved in the implementation of the community projects in all the phases. Bearing in mind that most these respondents were officials the community donor funded projects; this is likely to be a big weakness on the implementation of the projects. This is because the local community knows their specific needs and therefore would have been in better position to advice.

This agrees with Uphoof, Cohen & Goldsmith (1979) who argued that engaging the community in its own development ensures that the proposed development will better target people's needs, incorporate local knowledge, create grassroots capacity to undertake other projects and maintain facilities, distribute benefits equitably and help lower costs. To achieve outcomes through participation, considerable investment in time and resources by parties facilitating and engaging in the process are required. Often pressure for delivery of outputs may compromise the process. Unfortunately development progress is measured not only by developers but also by public opinion formers, by the speed in which tangible results are produced (Butes & Rensburg, 2000).

Further the researcher sought to establish the extent to which they agreed with the statements given in Table 4.7 using a 5 - Likert scale where SA = strongly agree, A= Agree, N= Neutral, D= disagree, and SD= strongly disagree.

Table: 4.8: Community participation

Statement	SA	A	N	D	SD	Total
The community is fully involved in the projects	1(2.9%)	13(37.1%)	1(2.9%)	19(54.3%)	1(2.9%)	35(100%)
There is awareness among community members	1(2.9%)	9(25.7%)	1(2.9%)	23(65.7%)	1(2.9%)	35(100%)
Most of the community members have interest in the projects	17(48.6%)	15(22.2%)	1(2.9%)	1(2.9%)	1(2.9%)	35(100%)
Mean responses	6(18%)	12(34%)	1(2.9%)	15(42.2%)	1(2.9)	35(100%)

Results from Table 4.8 indicates that majority (42.2%) of the respondents on average disagreed with the statements that, the community is fully involved in the projects, there is awareness among community members and most of the community members have interest in the projects. This shows that that there is need to improve on the community participation in the water projects.

This agrees with Cartel et al (1999) who argued that the frequent failure of water supply projects have been attributed to number of flaws in the projects among them lack of participation by the community. However the participation process must have a time limit since beneficiaries too at times grow impatient with endless discussion without any forthcoming results. Further the researcher tested the hypothesis below.

H₀ : There is no significant relationship between the level of community participation and sustainability of donor funded community water projects in Kitui Central constituency against

H₁: There is significant relationship between the level of community participation and sustainability of donor funded community water projects in Kitui Central constituency.

The results were presented in Table 4.9

Table 4.9: Correlation between level of community participation and sustainability of donor funded community water projects

		Community participation	Sustainability
Level of community participation	Pearson Correlation	1	0.59
	Sig. (2-tailed)		0.000
	N	35	35
Sustainability	Pearson Correlation	0.59	1
	Sig. (2-tailed)	0.000	1
	N	35	35

There is a strong positive correlation $r(35) = 0.59$ between the level of community participation and sustainability of donor funded community water projects in Kitui Central constituency. We do therefore reject the hypothesis because $P < 0.05$ and conclude that there is significant relationship between the level of community participation and sustainability of donor funded community water projects in Kitui Central constituency.

4.9 Management practices and sustainability of water projects funded by donors

The second objective for this study was to investigate how management affects sustainability of water projects funded by donors in Kitui central constituency. To achieve this objective the respondents were required to indicate whether capacity building was fully undertaken prior to the implementation of the projects. The responses were presented in Table 4.10.

Table 4.10: Community capacity building prior to implementation

	Frequency	Percent	Cumulative Percent
Yes	2	5.7	5.7
No	33	94.3	100.0
Total	35	100.0	

Table 4.10 shows that majority (94.3%) of the respondents indicated that community capacity building was not fully undertaken prior to the implementation of the water projects. This is likely to affect the management of the projects. Only 5.7% indicated that there was capacity building. This agrees with Lockwood(2004) who argued that to ensure effective community management of rural water projects, to achieve sustainability both internal and external factors must be taken into consideration as both make important contributions to the success and or failure of water projects. Internal factors such as lack of community cohesion, lack of management skills, unrepresentative water committees, technical issues, strong traditions, misplaced priorities and financial problems must be given priority under community management (Schouten & Moriarty, 2003).

Further the researcher sought to establish the extent to which they agreed with the statements given in Table 4.7 using a 5 - Likert scale where SA = strongly agree, A= Agree, N= Neutral, D= disagree, and SD= strongly disagree. The results were presented in Table 4.11

Table: 4.11: Community capacity building

Statement	SA	A	N	D	SD	Total
The community lacked appropriate skills for management.	1(2.9%)	31(88%)	1(2.9%)	1 (2.9%)	1(2.9%)	35(100%)
There is lack of policy guidelines on the management of water projects.	3(8.6%)	5(14.3%)	1(2.9%)	25(71.4%)	1(2.9%)	35(100%)
There was poor planning by the management.	12(34.3%)	20(57.1%)	1(2.9%)	1(2.9%)	1(2.9%)	35(100%)
Mean responses	5(14.7%)	19(53.6%)	1(2.9%)	9(25.9%)	1(2.9)	35(100%)

Table 4.11 shows that the mean responses for the majority (53.6%) agreed with the statements that; the community lacked appropriate skills for management, there is lack of policy guidelines on the management of water projects and there was poor planning by the management. This situation is likely to affect the sustainability of the community water projects. This agrees with(Kirsch, 2000) who argued that to ensure sustainability, a projects manager need to be trained together with the water management committee in order to have the necessary skills and knowledge about the donor policy and proper management. A project manager has to manifest not only

project management skills but also technical and expertise as required by the project (Thite, 2001).

The researcher further tested the hypothesis below.

H₀ : There is no significant relationship between management and sustainability of donor funded community water projects in Kitui Central constituency against

H₁: There is significant relationship between management and sustainability of donor funded community water projects in Kitui Central constituency.

Table 4.12: Correlation between management and sustainability of donor funded community water projects

		Management	Sustainability
Management	Pearson Correlation	1	0.55
	Sig. (2-tailed)		0.000
	N	35	35
Sustainability	Pearson Correlation	0.55	1
	Sig. (2-tailed)	0.000	1
	N	35	35

There is a strong positive correlation $r(35) = 0.55$ between management and sustainability of donor funded community water projects in Kitui Central constituency.

We do therefore reject the hypothesis because $P < 0.05$ and conclude that there is significant relationship between management and sustainability of donor funded community water projects in Kitui Central constituency.

4.10 Financial administration and sustainability of water projects.

The last objective for this study was to determine how financial administration influence sustainability of water projects funded by donors in Kitui central constituency. The respondents were required to indicate if the project records were audited. The responses were presented in Table 4.13.

Table 4.13: Are the project financial records audited

	Frequency	Percent	Cumulative Percent
Yes	1	2.9	2.9
No	34	97.1	100.0
Total	35	100.0	

From Table 4.13, it can be observed that according to majority (97.1%) of the respondents the financial records are never audited. This is likely to affect the financial management of the water projects. This agrees with (Lockwood, 2004) who argued that financial management is very important as far as operation and maintenance of donor projects is concerned. The aspect of financial management also entails auditing the books of accounts so as to know how the donor funds have been spent. The respondents were also requested to rate the given the reasons behind lack of financial skills. The responses were presented in Table 4.14

Table: 4.14: Reasons behind lack of financial skills

Statement	SA	A	N	D	SD	Total
Illiteracy	1(2.9%)	31(88%)	1(2.9%)	1(2.9%)	1(2.9%)	35(100%)
Poor record keeping	1(2.9%)	25(71.4%)	1(2.9%)	1(2.9%)	1(2.9%)	35(100%)
Misappropriation of resources	2(5.7%)	24(68.6%)	7(20%)	1(2.9%)	1(2.9%)	35(100%)
Mean responses	1(2.9%)	28(80%)	4(11.3%)	1(2.9%)	1(2.9)	35(100%)

Table 4.14 revealed that majority (80%) of the respondents mean responses agreed that the reasons behind lack of financial skills are illiteracy, poor record keeping, and misappropriation of resources. Majority (88%) agreed that illiteracy was the major reason behind lack of financial skills. This is because academic knowledge is necessary for financial management. Also majority (71.4%) and (68.6%) agreed that poor record keeping and misappropriation of resources respectively are also a reason behind lack of financial skills. This agrees with Bowr (2007) who argued that continuing transparency on income and expenditure requires literacy on book keeping and accounting which are essential aspects in sustainability of projects. Illiteracy, poor record keeping and misappropriation of resources has led to most donor projects to collapse due to underhand techniques used by water committees. The researcher further tested the hypothesis below.

H₀ : There is no significant relationship between financial administration and sustainability of donor funded community water projects in Kitui Central constituency against

H₁: There is significant relationship between financial administration and sustainability of donor funded community water projects in Kitui Central constituency.

Table 4.15: Correlation between financial administration and sustainability of donor funded community water projects

		Financial administration	Sustainability
Financial administration	Pearson Correlation	1	0.76
	Sig. (2-tailed)		0.000
	N	35	35
Sustainability	Pearson Correlation	0.76	1
	Sig. (2-tailed)	0.000	1
	N	35	35

There is a strong positive correlation $r(35) = 0.76$ between financial administration and sustainability of donor funded community water projects in Kitui Central constituency. We do therefore reject the hypothesis because $P < 0.05$ and conclude that there is significant relationship between financial administration and sustainability of donor funded community water projects in Kitui Central constituency.

CHAPTER FIVE
SUMMARY,DISCUSSION OF FINDINGS, CONCLUSIONS AND
RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of findings, discussions, conclusions, recommendations and suggestions for further research.

5.2 Summary of the findings

The purpose of this study was to analyze the factors influencing sustainability of donor funded community water projects in Kitui central constituency, Kitui County, Kenya. The study sought to establish how community participation influences sustainability of water projects funded by donors, to investigate how management affect sustainability of water projects funded by donors, to determine how financial administration influence sustainability of water projects funded by donors in Kitui central constituency. Data for this study was collected using the questionnaires as the main research instruments. The questionnaires were administered to 35 respondents. The collected data was analyzed using both descriptive and inferential statistics.

The study established that most of the respondents indicated that they were not involved in the implementation of the community projects in all the phases. Bearing in mind that most of these respondents were officials of the community donor funded projects; this is likely to be a big weakness on the implementation of the projects. This is because the local community knows their specific needs and therefore would have been in better position to advice. Also majority of the respondents on average disagreed with the statements that, the community is fully involved in the projects,

there is awareness among community members and most of the community members have interest in the projects. This shows that that there is need to improve on the community participation in the water projects. There is a strong positive correlation community participation ($r = 0.59$) and sustainability of donor funded community projects.

Secondly, the study established that majority of the respondents indicated that community capacity building was not fully undertaken prior to the implementation of the water projects. Very few indicated that there was capacity building. Also the mean responses for the majority agreed with the statements that; the community lacked appropriate skills for management, there is lack of policy guidelines on the management of water projects and there was poor planning by the management. This situation is likely to affect the sustainability of the community water projects. There is a strong positive correlation community management ($r = 0.55$) and sustainability of donor funded community projects.

Finally the study established that majority of the respondents indicated that the financial records are never audited. This is likely to affect the financial management of the water projects. Also majority of the respondents mean responses agreed that the reasons behind lack of financial skills are illiteracy, poor record keeping, and misappropriation of resources. There is a strong positive correlation community financial management($r = 0.76$) and sustainability of donor funded community projects.

5.3 Conclusions from the study

Based on the findings of this study, the researcher made the following conclusion. Most of the community members were not involved in the implementation of the community projects in all the phases and that there was a strong positive correlation between community participation and sustainability of donor funded community projects.

Secondly, the community capacity building was not fully undertaken prior to the implementation of the water projects and as a result the community lacked appropriate skills for management, lacked information of policy guidelines on the management of water projects and there was poor planning by the management. There is a strong positive correlation between community management and sustainability of donor funded community projects.

Finally the study established that the most of the community financial records are never audited. This is likely to affect the financial management of the water projects. This is because of lack illiteracy, poor record keeping, and misappropriation of resources. There is also a strong positive correlation between community financial management and sustainability of donor funded community projects.

5.4 Recommendations from the study

Based on the finding of this study, the researcher wishes to make the following recommendations.

- i. The community should be involved by the donors in the implementation of donor funded community water projects at all phases. This is because engaging the community in its own development ensures that the proposed development will better target people's needs, incorporate local knowledge, create grassroots capacity to undertake other projects and maintain facilities, distribute benefits equitably and help lower costs.
- ii. The Government should train the community leaders on the management of donor funded community water projects before implementation. This is because Internal factors such as lack of community cohesion, lack of management skills, unrepresentative water committees, technical issues, strong traditions, misplaced priorities and financial problems must be given priority under community management.
- iii. The donors should frequently audit the books of accounts for the community water projects. This is because financial management is very important as far as operation and maintenance of donor projects is concerned. The aspect of financial management also entails auditing the books of accounts so as to know how the donor funds have been spent.

5.5 Suggestions for further research

This study investigated the factors influencing sustainability of donor funded community water projects in Kitui central constituency, Kitui County, Kenya. Further research can be done on the following;

- i. The influence of monitoring and evaluation on the success of community projects in Kitui County by the County government.
- ii. The influence of community involvement on completion of donor funded projects in Kitui County by the County government.
- iii. The impact of financial donations and grants on community water development in Kitui County by the County government.
- iv. Impact of technology innovation on sustainability of water projects in Kitui County by the County government.

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APPENDICES

Appendix I: Authorization Letter

P.O. Box 1- 90200

Kitui.

To the members

Donor funded community water projects

Dear Respondents,

Request for Permission to collect data from donor funded community water projects in Kitui Central constituency, Kitui County.

I am a final year masters students at the University of Nairobi, department of extra Mural studies, Kitui sub-centre.

As partial fulfillment of my masters in Arts degree (project planning and management) I intend to carry out research on analysis of factors influencing sustainability of donor funded community water projects in Kitui central Constituency, Kitui County. Being one of the community based water projectswho benefited from donor funds your project has been selected together with other projects in Kitui central constituency to participate in this study. The study is purely academic and therefore any information provided was treated with confidence it deserves.

I am requesting for your well deserved permission to authorize me do this necessary study on the projects who benefit from donor funds.

Thanks in advance.

Benjamin Keli Mutonga
RESEARCHER.

Appendix II: Questionnaire for community members on sustainability of donor funded community water projects

This questionnaire is made to collect information to assist in conducting a study on the analysis of factors influencing sustainability of donor funded community water projects in Kitui central constituency, Kitui County.

I kindly request you to complete the questionnaire honestly and objectively giving necessary details. Use tick (√) to correct value among the multiple .i.e. choices given.

Section A: Personal information/Project Information.

Tick the appropriate box

1. What is your gender?.

a) Male ()

b) female ()

2. How old are you? Tick the appropriate age bracket below.

a) Below 18 years ()

b) 19-24 years ()

c) 25-30 years ()

d) 31-35Years ()

e) Above 35years ()

3. What is your position in the community water project? Tick in the appropriate space provided below.

a) Chairperson ()

b) Secretary ()

c) Treasurer ()

d) Member ()

e) Beneficiary ()

4. How many beneficiaries does your community project serve?

a) 1-12 ()

b) 13-20 ()

c) 21- 30 ()

d) 31 – 50 ()

e) More than 50 ()

5. For how long has your project been in existence?

a) Less than one year ()

b) 1-3 years ()

c) 4-8 years ()

d) 9 – 12 years ()

e) Above 12 years ()

6. Has your community project benefited from donor funds?

Yes () No ()

State the amount received.

.....

7. How was the donor funds utilized?

.....

8. Was it a startup/ existing project?

.....

.....

9. Has your project fully benefited the community?

Yes () No ()

Section B

Influence of community participation on sustainability of donor funded community water projects in Kitui central constituency.

10. How did the community participate in the implementation of the project?

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

11. Was your participation required in all phases of the project implementation?

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

12. How would you rate the following factors as the reasons behind poor participation in donor funded community water projects in Kitui central constituency?

Key: SA = strongly agree

D= Disagree

A = Agree

SD= strongly disagree

U = Undecided

Tick appropriately

		SA	A	D	SD	U
a)	Lack of involvement					
b)	Lack of awareness campaigns					
c)	Lack of interest in the project					

Section c: Influence of community management in the sustainability of donor funded community water projects in Kitui central constituency?

13. Was the community capacity building fully undertaken prior to the implementation of the project? Yes () No ()

14. How would you rate the below factors as the reasons behind poor management of donor funded community water projects in Kitui central constituency?

Key: SA = Strongly Agree

A = Agree

SD= strongly Disagree

D = Disagree

U= undecided

(Tick appropriately)

	Factor	SA	A	D	SD	U
a)	Lack of appropriate skills					
b)	Lack of policy on management of donor funded community water projects					
c)	Poor planning					

Section d: Influence of financial management skills on sustainability of donor funded community water projects in Kitui central constituency?

15. Are your project financial records audited?

Yes () No ()

16. Has project experienced difficulties in financial management? If yes explain

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17. How would you rate following factors as the reasons for lack of financial skills in the implementation of donor funded community water projects?

Key: SA = Strongly Agree

A = Agree

SD= strongly Disagree

D = Disagree

U= undecided

	Factor	SA	A	D	SD	U
a)	Illiteracy					
b)	Poor record keeping					
c)	Misappropriation of resources					

SECTION C

(18) Briefly explain how the following factors have influenced the sustainability of donor funded community water projects

(i) Dependency on donor funds

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(ii) Weak sustainability structures

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(iii) Political interference.

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(iv) Corruption.

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(v) High poverty levels.

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(19) In your own view which other factors do you think may contribute to lack of sustainability for donor funded community water projects

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Thank you.